## Borough of Southend-on-Sea.

# ANNUAL REPORT

OF THE

# MEDICAL OFFICER OF HEALTH

## For the Year 1905,

## BY J. T. C. NASH,

M.D., M.B., C.M. (EDIN.), D P.H. (CAMB.), ETC.,

MEDICAL OFFICER OF HEALTH FOR THE BOROUGH ; MEDICAL
SUPERINTENDENT OF THE BOROUGH INFECTIOUS DISEASES HOSPITAL ;
AND MEDICAL OFFICER TO THE EDUCATION AUTHORITY.

Southend-on-Sea :
FRANCIS & SONS, PRINTERS & STATIONERS, 55, HIGH STREET.

## TO THE HEALTH COMMITTEE.

Mr. Chairman and Gentlemen,

I have the honour to present my Annual Report for the year 1905.

On the whole the vital statistics for the past year are satisfactory. The death rate for 1905 (even though it includes a considerable number of visitors who came to spend their last days in the Borough) is the lowest recorded since Southend became a town of any considerable size. Should the deaths even of all known visitors be excluded, the death rate would probably not exceed 10 per 1,000 for 1905.

Considering the meteorological character of the summer, the infantile mortality showed a satisfactory decrease as compared with the previous year; but we must not remain satisfied with the results obtained, and I therefore invite your earnest attention to the remarks I make in connection with this matter in the body of this Report, as well as to many other matters which demand your consideration.

As regards the prevalence of notifiable diseases, the year was again a satisfactory one, and it is particularly gratifying to note a continuance of the comparative immunity from typhoid fever, which made 1904 a red letter year in the history of the Borough.

The work of my department increases year by year, and I think the time has now come for an addition to the working staff, and taking a broad view I am of opinion that a highly qualified Lady Health Officer or Lady Sanitary Inspector would prove of the greatest value to the town, especially in connection with further reducing the infantile mortality.

I could fully occupy this officer's time in house to house inspection, and in giving advice to mothers, &c., and the appointment of such an officer would greatly release the present Inspectors for more assiduously and systematically carrying out their primary duties of inspection. Inspector Penn has during the past year obtained the certificate of a meat inspector, and if relieved of some of the duties I am at present compelled to assign to him, he could give more time to the important duties of food inspection.

I once more am glad to be able to testify to the willing and cheerful performance of their respective duties on the part of the whole of my staffs both at the Health Department and the Borough Sanatorium, and desire to gratefully acknowledge the confidence expressed in myself not only by the Town Council but by the Burgesses at large.

I have the honour to be,

Your obedient servant,

J. T. C. NASH, M.D., M.S., D.P.H.,

*Medical Officer of Health.*

*March, 1906.*

# BOROUGH OF SOUTHEND-ON-SEA.

### Health Committee:

Chairman, Mr. Councillor Allen.
The Mayor (Mr. Alderman J. Brightwell, J.P.)
Mr. Alderman Francis, J.P.
,, Councillor Barker.
,, ,, Campbell, J. P.
,, ,, Doody.
,, ,, Fletcher.
,, ,, King.
,, ,, Osborn.
,, ,, Richardson.

### Town Clerk:

Mr. W. H. Snow, Solicitor.

### Deputy Town Clerk:

Mr. H. J. Worwood, Solicitor.

### Borough Engineer:

Mr. E. J. Elford, C.E.

### Honorary Consulting Medical Officer of Health:

Mr. A. Clough Waters, M.B., B.S., J.P.

### Matron of Sanatorium:

Miss Thompson.

### Officials of Health Department:

| | |
|---|---|
| *Chief Inspector of Nuisances* | W. Whur, A.S.I. |
| *Assistant* ,, | E. W. Penn, A.S.I. |
| *Assistant* ,, | F. W. Maynard. |
| *Clerk* - - - | F. T. Webber. |

### Medical Officer of Health:

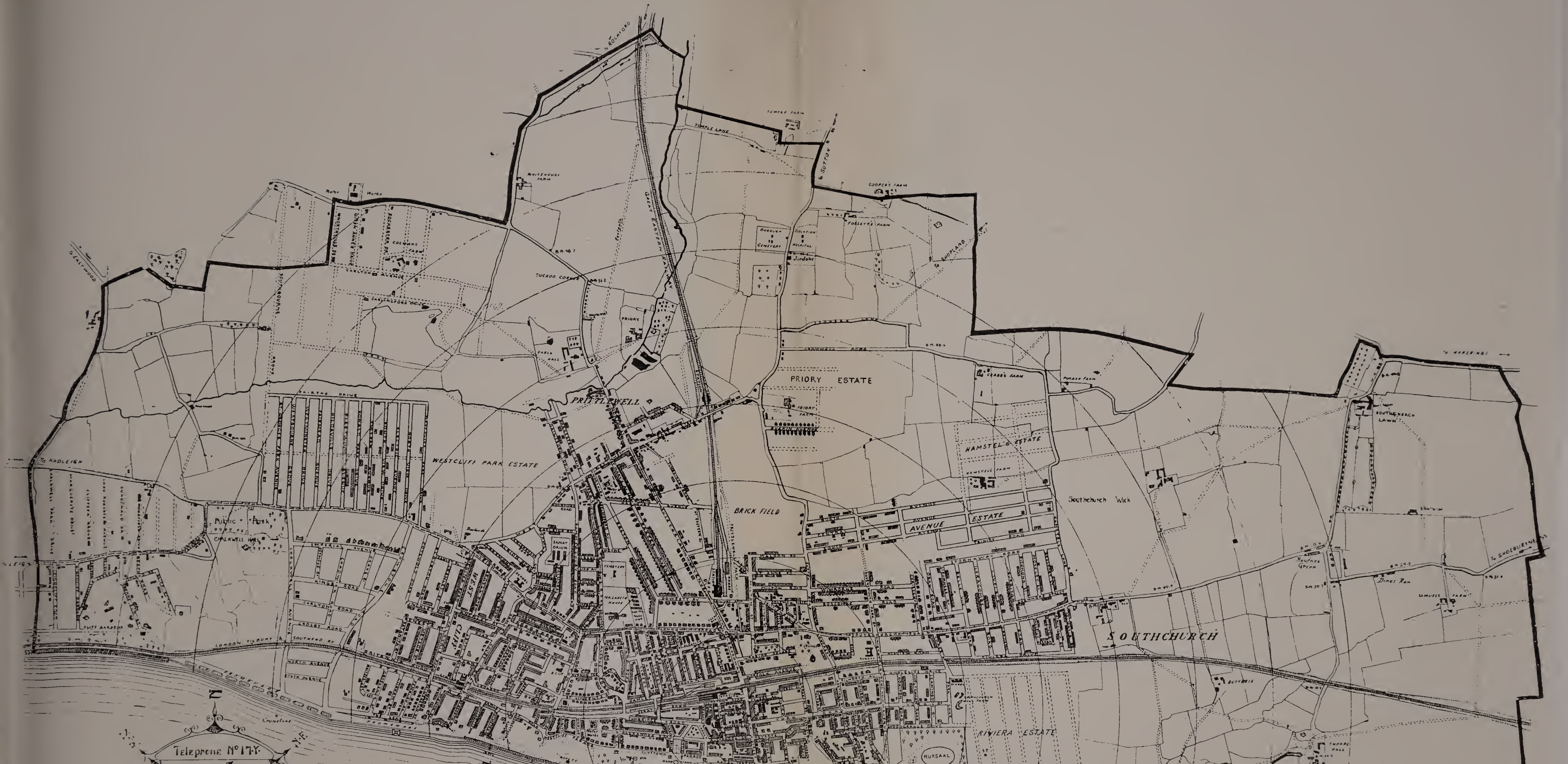
J. T. C. Nash, M.D., M.S., D.P.H.

# BOROUGH OF SOUTHEND-ON-SEA.

## Physical Features and General Character of the District.

The Borough of Southend-on-Sea at present comprises three wards and five ecclesiastical parishes. The front of the old town in the east is situated at the sea level, but towards the west, the houses on the front to which access is afforded by Pier Hill are situated on the Cliffs from 80 to 100 feet above sea level.

Generally speaking the central part of the Borough stands on high ground. The direct London Road from its junction with the Broadway (a continuation of High Street) where the level is 93.0 feet above O.D., gradually rises in a westerly direction until a level of 120 feet is reached at the junction of Leigh Road and West Road. In an easterly direction this main road gradually falls to 79.4 feet opposite Southchurch Vicarage, after which there is a more rapid descent in the course of about a mile to Bournes Green corner, which is only 20.4 feet above ordnance datum. The London Road occupies the crest of ridge of the high ground, from which the ground slopes both north and south. The southern slope is divided into two main valleys, eastern and western.



Telephone No 17-Y.

James Thompson

Architect & Surveyor

Westcliff on Sea

1904

N.E. S.W. S.E. W E N S

Boundary :-

Electric Tramway :-

Railways :-

Circle lines ¼ Mile Radius from G.P.O.

# Southend on Sea

Altitudes indicated thus (B.M. 20.7) refer to Bench Marks on Buildings, Walls, &c.

N.B. The representation on this map of a Road, Track or Footpath is no evidence of the existence of a right of way

All RIGHTS RESERVED

Scale – Six Inches to one Statute Mile or 880 feet to One Inch ratio

FRANCIS & SONS, PRINTERS, SOUTHEND-ON-SEA.

SITUATION—Latitude 51° 32′ to 51° 34′
East Longitude 3° 39′ to 3° 45′

ELEVATION—Varies from sea level to 125 feet above ordnance datum.

SOIL—The surface formation is variable, consisting chiefly of brick earth, river gravel and London clay.

### STATISTICAL SUMMARY.

| | | |
|---|---|---|
| Acreage | | 5,172 |
| Census population, April, 1901 | | 28,857 |
| Occupied houses, June 30th, 1905 | | 8,751 |
| Population estimated to the middle of 1905 | | 46,380 |
| Average number of persons per house (estimated) | | 5.3 |
| Density of population per acre, 1905 | | 8.9 |
| Births | Males 521<br>Females 539 | Total 1,060 |
| Annual rate of Births per 1,000 inhabitants | | 22.85 |
| Total Deaths | | |
| Total Deaths | Residents within the Borough 490<br>Residents outside the Borough 25<br>Visitors dying in public institutions 18 | 533 |
| Nett deaths after deducting visitors | | 515 |
| Nett annual rate of mortality per 1,000 | | 11.10 |
| Excess of registered births over deaths of residents within the Borough | | 571 |
| Infantile mortality | | 118.86 |
| Rainfall for the year 1905 | | 17.89 inches |
| Rain fell on | | 150 days |
| The greatest rainfall month was June | | 3.58 inches |
| The greatest rainfall in 24 hours was on June 5th | | 1.18 inches |
| The least rainfall month was July | | 0.29 inches |
| The month with fewest wet days was July | | 6 days |
| The month with most wet days was March | | 21 days |
| Average annual rainfall for previous fourteen years (1891—1904) | | 19.99 inches |
| Average number of days of rain per annum for period 1891—1903 | | 137 days |
| Deficiency of rainfall during 1905, as compared with average for 1891—1904 | | 2.10 inches |
| Rateable Value for the Borough 1905 | | £291,759 |

The following table is drawn up to make a comparison between Southend-on-Sea, and other Urban Districts, and England and Wales as a whole for the year, 1905 :—

| | Annual Rates per 1000 living. | | | Infant mortality. |
|---|---|---|---|---|
| | Births. | Deaths from all causes. | Deaths from seven chief Epidemic Diseases. | Annual Death Rate of Infants under 1 year per 1000 Births. |
| England and Wales ... | 27·2 | 15·2 | 1·52 | 128 |
| Rural England and Wales | 26·3 | 14·9 | 1·09 | 113 |
| 76 Great Towns ... ... | 28·2 | 15·7 | 1·88 | 140 |
| 141 Smaller Towns ... | 26·9 | 14·4 | 1·50 | 132 |
| Southend-on-Sea ... ... | 22·85 | 11·1 | 1·25 | 119 |

Southend is one of the 141 smaller towns. It will be seen that its mortality figures are less than the average for the smaller towns in every direction.

The seven chief zymotic diseases are Small Pox, Scarlet Fever, Measles, Whooping Cough, Diphtheria, Typhoid Fever, and Diarrhœa.

The Southend zymotic death rates are seen on reference to the following table :—

SOUTHEND-ON-SEA, 1905.

| Zymotic Diseases. | Death rate per 1000 inhabitants. |
|---|---|
| Measles ... ... ... | 0·13 |
| Whooping Cough... ... | 0·38 |
| Diphtheria (including Membranous Croup) ... | 0·06 |
| Typhoid Fever ... ... | 0·17 |
| Scarlet Fever ... ... | 0·00 |
| Small Pox ... ... | 0·00 |
| Diarrhœa ... ... | 0·51 |

# Vital Statistics.

## Population.

For reasons given in previous annual reports a yearly enumeration of occupied houses is necessary in order to gain an approximate estimate of the mid-year population. The Health Committee in 1905 obtained this information through the Chief Dust Inspector (Mr. Emmins) from whose returns I have constructed the following tabular statement for June 30th, 1905 :—

| Ward. | Occupied Houses. | Unoccupied Houses. | Lock-up Shops. | Totals. |
|---|---|---|---|---|
| North ... ... | 3,884 | 396 | 28 | 4,308 |
| East ... ... | 2,295 | 200 | 230 | 2,725 |
| West ... .. | 2,572 | 228 | 59 | 2,859 |
| TOTAL .. | 8,751 | 824 | 317 | 9,892 |

Calculating on the Census (1901) figures of 5.3 persons per house, the mid-year population of the Borough of Southend-on-Sea in 1905 was 46,380.

I estimate that the population is distributed in the Wards of the Borough as follows :—

North Ward, 20,585; East Ward, 12,163; West Ward, 13,632.

The growth of population is largest in the North Ward, which is by far the largest acreage Ward.

I calculate the mid-year parish population for 1905 as follows :—

| Parish. | Inhabited Houses. | Population. |
|---|---|---|
| St. John's ... ... | 2,868 ... ... | 15,200 |
| St. Albans ... ... | 1,786 ... ... | 9,466 |
| St. Mary's ... ... | 1,708 ... ... | 9,052 |
| All Saints ... ... | 1,825 ... ... | 9,673 |
| Southchurch ... ... | 564 ... ... | 2,989 |

The first four Ecclesiastical Parishes are included in the Civil Parish of Prittlewell, which therefore has a population of 43,391.

At the National Census of April 1st, 1901, the populations of Prittlewell and Southchurch Civil Parishes respectively were :—

Civil Parish of Prittlewell, 27,245 } Total, 28,857.
" " Southchurch, 1,612 }

The comparative figures for June 30th, 1905, are :—

Civil Parish of Prittlewell, 43,391 } Total, 46,380.
" " Southchurch, 2,989 }

In the 4¼ years which, in the mid-year, 1905, had elapsed since the National Census, the population of the Borough as a whole had increased by about 60 per cent., while that of the parish of Southchurch had increased by about 80 per cent. At the census (1901) there were in Prittlewell (C.P.) an average of 5.33 persons per house, and in Southchurch (C.P.) an average of 5.2 persons in the house, giving an average of 5.3 for the whole Borough. I have reason to think that the average population per house in Southchurch now exceeds 5.2; and I have no reason to think that the average per house in Prittlewell Civil Parish has decreased. If anything, therefore, an estimate of 5.3 per house for the whole Borough is an under estimate, but it fairly approximates to the real population, and is in my opinion the safest estimate on which to base statistics.

## Acreage and Density of Population.

The area of the Borough is 5,172 acres, giving a density of population of 8.9 persons per acre, as compared with 8.1 in 1904; 7.19 in 1903; 5.76 in 1901; and 4.36 in 1898.

## Births.

Although a decreasing birth-rate is evident, the number of births registered in the Borough of Southend during 1905 is 1,060, as compared with 1,007 births in 1904, 935 in 1903, 839 in 1902, and 781 in 1901.

Of these 1.060 births 521 were males, and 539 females. The birth rate was 22.85 per 1,000 inhabitants, as compared with 24.01 in 1904, 25.07 in 1903, 25.01 in 1902, 26.21 in 1901, and with an average of 26.21 during the preceding ten years. [The birth rate for England and Wales for 1905 is given as 27.2 by the Registrar-General.] In Southend, during 1905, 30 births were illegitimate, 18 male and 12 female, forming 2.83 per cent. of the total number of births.

The birth rate is very low, and the decrease in the proportion and actual number of illegitimate births, notwithstanding the increase of population is noteworthy.

The natural increase of population in the Borough during 1905 was 527. By " natural increase " is meant the excess of births over deaths.

The estimated actual increase of population which includes besides the " natural " increase, the estimated excess of immigrant residents over emigrant was 4,436 in 1905, as compared with an estimated increase of 4,661 in 1904, and 3,476 during 1903. It would appear from this that the rate of immigration reached high water mark in 1904, there being a slight reduction in the total increase for 1905, as compared with 1904, notwithstanding a noteworthy excess in the " natural " increase. I am informed, however, that in the present year (1906) there are indications of a higher immigration again.

## Deaths.

The total number of deaths registered in the Borough during 1905 was 508. Without correction this would give a death rate of 10.95.

By eliminating the deaths of 18 non-residents (that is persons brought into the district on account of sickness or infirmity and *dying in public institutions* in the District) the number of deaths registered in the district is reduced to 490.

There is at least one other death registered in the Borough which should undoubtedly be eliminated, and that is that of a young officer of Sheerness, who lost his life by drowning in mid-stream, the body not being recovered for a month. Omitting this death reduces the number to 489, which number, however, still includes the deaths of several visitors by suicide and drowning, as well as by cancer and tuberculosis and other complaints.

To these must be added 25 deaths of residents which occurred in public institutions outside the district. Thus we get 514 (or 515) as the nett deaths belonging to the district.

This number gives a nett death-rate of 11 08 (or 11 10) for 1905. The death rate for England and Wales for 1905 was 15.2.

The rates in the immediately preceding years in Southend were 14.20 in 1904; 11.88 in 1903; 13.29 in 1902; 16.84 in 1901; 14.44 in 1900.

During 1905 there were registered the deaths of 125 persons upwards of 65 years of age, that is 24.2 per cent. of the total deaths.

126 deaths or 24.4 per cent. of the total were under one year of age.

The number of uncertified deaths during the year was 26, compared with 31 in 1904, 29 in 1903, 24 in 1902, 22 in 1901, 27 in 1900. This means that 5 per cent. of the deaths registered in Southend in 1905 were uncertified. In the Annual Report for 1903-4 by the Medical Officer of the Local Government Board, he lays stress on the desirability of legislation to give power to the Medical Advisers of Local Authorities to make prompt inquiry in the matter of uncertified deaths.

## Infantile Mortality.

The Local Government Board has issued a new table (Table V.) to deal with the statistics of Infantile Mortality. Of course all statistics dealing with causes of death are more or less fallacious in small details, but when dealt with on broad lines are, as a whole, trustworthy, useful, and instructive. The present tabular statement is a case in point.

The question of infantile mortality—which is one of the utmost importance—has hitherto been dealt with in the most haphazard and unequal fashion—the public health annual reports in some districts hardly mentioning the subject. Now, at any rate, valuable data on simple and comparable lines will be collected from all districts, even if comments thereon are scanty.

Reference to my previous Annual Reports will show that I have in past years attached very great importance to infant mortality statistics in Southend, and have given much consideration to the factors affecting the high infant mortality which has, generally speaking, hitherto prevailed in the Borough.

With the exception of the years 1902 and 1903, diarrhœal diseases have been unduly prevalent in Southend. I have clearly shown that this excess of diarrhœa prevails chiefly in those parts of the parishes in the Borough which abut upon the brickfields in Sutton Road.

In consequence of a special report on epidemic diarrhœa which I made to the Health Committee in the autumn of 1904, the Town Council supported the Health Committee in arranging (pending the provision of a Refuse Destructor) for the cartage of all house refuse out of the Borough to brickfields situated in the open country some miles away. This arrangement was made by the Borough Engineer early in 1905, the consequence being that instead of a daily deposit of about 30 tons of fresh refuse in the centre of a rapidly growing neighbourhood, this large amount of filth, amounting to more than 10,000 tons in the course of a twelvemonth, has been carried right out of the district.

At brickfields generally, house refuse is not immediately dealt with beyond collecting such comparatively harmless constituents as old tins and bottles. The daily deposit of putrescible organic refuse therefore accumulates, and in the summer months proves a source of attraction for flies which lay their eggs in countless myriads among the refuse. These eggs produce larvæ which act as scavengers, but the following summer the natural sequence is a veritable plague of flies in the immediately surrounding districts, rendering life, not only figuratively, but, in the case of many infants hitherto, actually insupportable.

The Burgesses are indebted to the Town Council for having, on my initiative, adopted the view that this large deposit of refuse at the brickfields in Sutton Road was inimical to the health and comfort of the surrounding inhabitants. The stoppage of the town's supply of refuse has not only resulted in the non-accummulation of thousands of tons of refuse during the past twelve months, but has materially assisted in reducing the vast accumulation of previous years as the brick makers have been obliged to fall back in much larger measure than formerly on the heaps already accumulated.

A partial consequence has been that during 1905 flies were far less numerous in the neighbourhood of the brickfields than in the previous year, and I have also the pleasure of noting a co-incidental considerable reduction in the infantile mortality from diarrhœal diseases, as compared with previous years when hot *dry* summers prevailed. As a matter of fact the diarrhœa statistics for 1905 closely approximated to those of former wet *cool* summers. This speaks volumes for the wisdom of the Council in having dealt with the question of the disposal of our house refuse in the best way available at the time.

The matter is one of so much importance that I propose to give in tabular form, the population, births, and infantile mortality from diarrhœa for each year since 1901. Previous to this, diarrhœa was not sufficiently differentiated from haphazard synonyms to be of service for comparative purposes.

## Table A.

| YEAR. | 1901. | 1902. | 1903. | 1904. | 1905. |
|---|---|---|---|---|---|
| Population (Estimated) ... ... | 27,793 | 33,537 | 37,283 | 41.944 | 46,380 |
| Births ... ... ... ... | 781 | 839 | 935 | 1,007 | 1,060 |
| Deaths under (in actual number) 1 year of age ... ... . | 140 | 84 | 111 | 180 | 126 |
| Rate per 1,000 Births ... ... | 179·2 | 100·1 | 118·7 | 178·7 | 118·8 |
| No. of Deaths attributed to Diarrhœa of infants under 1 year ... ... ... ... | 27 | 5 | 6 | 68 | 21 |
| Diarrhœa Death Rate per 1,000 Births ... ... ... .. | 35·4 | 5·9 | 6·4 | 67·5 | 19·8 |
| Percentage of Diarrhœa Deaths to total Infant Deaths .. | 19·3 | 5·9 | 5·4 | 37·7 | 16·6 |
| Total Diarrhœa Zymotic Death Rate per 1,000 Population ... | 1·15 | 0·24 | 0·16 | 2·00 | 0·51 |
| Total Rainfall for the year | 14·83 inches | 18·51 inches | 31·66 inches | 18·76 inches | 17·89 inches |
| Total Rainfall between May and September, the 5 Summer months of fly hatching ... | 5·40 inches | 10·38 inches | 17·07 inches | 8·67 inches | 8·01 inches |
| Total number of Wet Days in the 5 months, May to Sept | 30 | 68 | 65 | 41 | 53 |

Some years ago Dr. E. B. Longstaff showed the coincidence between an excessive summer rainfall and a lowered infantile mortality, and the reports of numerous Medical Officers of Health bear testimony to the general correctness of this observation.

Various reasons have been adduced for this undoubted coincidence, some ascribing the good effects to the laying of dust, others to the cooling of the atmosphere, and others to the diminution in the amount of bacterial growth in milk.

My own view is that the just mentioned factors are contributory factors of comparatively secondary importance. The chief cause in my opinion is that which I ventured to lay before a meeting of Essex Medical Officers of Health at Chelmsford, in

November, 1902, and subsequently before the Epidemiological Society of London early in 1903, as well as in my last three annual reports, viz. :—That in any town where organic refuse is allowed to accumulate in any quantity such collections act as breeding places for myriads of flies which carry thence to human food the pernicious bacteria which play such havoc among infants during the summer months. This opinion was originally founded on some observations I made with respect to the coincidental appearance of flies and diarrhœa in 1902. Continued observations since 1902 have confirmed me more and more in the adequacy of this explanation, and by this theory it becomes easy to explain the high incidence of diarrhœa in many North Western and Midland towns, in spite of a larger rainfall than ever falls to our lot in Southend.

In the towns I refer to, conservancy methods of sewage disposal are in parts, still in vogue—excreta being kept in considerable quantities in the immediate vicinity of houses—old fashioned midden privies being in common use in some districts in these towns. These privies are rarely properly cleaned out, and I have seen the larvæ of flies in numbers infesting these eminently insanitary structures.

But though for an average summer the decline in the incidence and mortality from infantile diarrhœa in Southend in 1905 is a matter for congratulation, the figures are not yet satisfactory, and the incidence of summer diarrhœa in the vicinity of the brickfields is still greater than it should be. Flies, though less numerous, are still to be found in much larger numbers near the brickfields than elsewhere in the Borough, and I fear that the continuance of this industry in this position will still entail a higher diarrhœa mortality in the surrounding districts than in other districts in the Borough.

Having ceased to deposit our own refuse in the brickfields the way is now clear to take action concerning the refuse of other places brought into the district.

Pending the provision of a Refuse Destructor I hope the Council will not relax its efforts to cart all the house and trade refuse out of the Borough to rural brickfields, but as the expense of cartage is very great it is obvious that no time should be lost in once more making a determined effort to secure a Refuse Destructor.

To return to diarrhœa as a cause of infantile mortality, a glance at Table V. and Table A will disclose that although the incidence of this disease has been greatly reduced as compared with 1904, it still formed in 1905 the most destructive agency in the mortality of infants between one and twelve months of age.

The surest way of preventing an excess in mortality from diarrhœa is to insist on doing away with all collections of organic refuse in populous neighbourhoods, and this chiefly because such collections attract and breed flies. "Where the carcase is there will the eagles be gathered together," and where organic refuse is there will flies congregate in the fly season.

In my annual report for 1902 I clearly stated my opinion that the factors—season and imperfect sanitation—were in truth only *indirect* factors in the incidence of diarrhœa, but were essential for the production of the most direct factor—videlicet—the multiplication of the house fly and blue bottle fly—which act as carriers of harmful bacteria to human food—particularly cow's milk and condensed milk.

In 1904 the late Dr. Edward Blake published an interesting brochure* in which he did me the honour of quoting my opinion from a letter I wrote to the *Lancet* in January, 1903. Quite independently he had arrived at the same conclusion, which he admirably summed up in a single italicised sentence, "the fly season is the diarrhœa season."

Obviously, as I have reiterated year after year, our efforts must be directed chiefly against the breeding of house flies—in other words, by strict attention to cleanliness and sanitation—which includes the prevention of large deposits or accumulations of organic matter in the vicinity of any considerable population.

I place this factor far above all others in the prevention of infantile diarrhœa.

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* Colitis, Appendicitis and their allies (*Henry G. Glaisher*).

To return once more to Table A, which I have constructed to show the relative summer rainfall and diarrhœa deaths, it will be noted that prior to 1905, in the two years 1901 and 1904, the diarrhœa zymotic death rate was excessive, while in the two intermediate years, 1902 and 1903, it was very low.

The rainfall figures deserve close attention and analysis to arrive at suggestive conclusions, though the series of years is too short to absolutely dogmatise on the matter.

Generally speaking, the figures corroborate Dr. Longstaff's observations of the coincidence between a greater summer rainfall and a lowered infantile mortality—yet a carping critic would say "there was not much difference in the total summer rainfall of 1902 and 1904—yet one was the year when the lowest infantile mortality was recorded, and the other the year when the highest was reached." I agree, but at the same time I draw such a critic's attention to the fact that there were 68 wet days in the summer of 1902 as compared with only 41 wet days in the summer of 1904, or more than half as many again. This is an important point, but it is not everything. It is, however, of very much greater importance than the total rainfall for the period under discussion, because five or six inches of rain might fall in three or four days' time, and the rest of the summer be absolutely dry and cloudless. A concentrated rainfall in a few days might prove injurious to flies, but more likely would only temporarily affect their multiplication to any extent. On the other hand a larger number of wet days, particularly if the weather is chilly at the same time (as it was in 1902) has a most inhibitive effect upon the multiplication, and a deterrent effect upon the emigration of flies.

That it is the number of wet days in the summer which principally affects infantile diarrhœa is seen by comparing the total rainfall for the year in 1902 and 1904. In this respect there was not much to choose between the two years, the figures being within 0.25 inches of each other, but there were no fewer than 68 wet days in the summer season of 1902, as compared with only 41 in that of 1904.

In 1902, except for a brief period of three weeks in September, the meteorological conditions seemed to be quite adverse to fly life, In 1904 the conditions were exceedingly favourable to fly life, particularly the period covered by the latter end of July, the whole of August, and the first few days of September. In all this period there were not three consecutive days of rain, until the 6th, 7th and 8th September, when 0.22, 0.06 and 0.06 inches fell respectively.

I think the weather which prevails in the month of May has considerable effect upon the subsequent development of flies. In my opinion a cold wet May may very materially lessen the numbers of flies which will make their presence known and felt in July, August and September.

The year 1905, to which this report more particularly applies, enjoyed a very average kind of summer. It was a fairly warm season, and did not appear to be spoiled by wet. As a matter of fact, only 8.01 inches of rain fell in the five summer months, as compared with 8.67 inches in the dry summer of 1904. It was, in my opinion, a summer favourable to fly multiplication, but it is a fact that flies were far less numerous than in 1904. This was coincident with the carting of the annual 10,000 tons of refuse of the Borough outside the Borough. Where, however, outside the district, I examined collections of fresh house refuse during 1905, I found flies very abundant, bearing out my opinion that, given the organic refuse, the meteorological conditions were favourable in 1905 to the breeding of flies.

That ordinary dust (or even collections of house refuse at other times than the summer months) does not materially act as a cause of epidemic diarrhœa is evidenced by the fact that it is a rarity to have a death attributed to diarrhœa during the greater part of the year, even in the neighbourhood of large accumulations of organic and putrefying refuse. It is not, as a rule, until the latter part of July, when flies have become numerous and migratory in their habits that the diarrhœa season begins. But, apart from the question of diarrhœa and of flies, the deposit of house refuse in large quantities in the vicinity of a collection of houses is obviously a glaringly insanitary procedure, which should never be countenanced by any Sanitary Authority.

If deaths from enteritis and gastric intestinal catarrh be bracketed with those from diarrhœa the total number of deaths attributed to diarrhœal diseases during 1905 was 32, and dust carried by flies or otherwise to *food* was no doubt the chief cause of all these deaths. There is, however, another formidable cause of death bracketed under wasting diseases, viz., atrophy, debility or marasmus, which, in large measure, is also a *food* disease.

In this case, however, the wasting is generally due to the use of insufficient or improper articles of food.

Many brands of condensed milk when diluted according to the printed directions form a poor in-nutritious starvation diet for the unfortunate infants "fed!" on them. In other instances the infant, making known its disapproval of so insufficient a dietary, is quietened with improper articles of diet, which appease its immediate hunger, but sooner or later lead to indigestion and subsequent wasting. Twenty-one deaths, or a sixth of the total infant deaths were attributed to atrophy or debility or marasmus. A large proportion of these deaths were preventable, and the call is still urgent, as I have pointed out in previous reports, for the instruction of our young mothers and the elder girls in our schools in the feeding and management of infants.

Ten out of 126 infant deaths (or 8 per cent.) were uncertified.

During 1905 particulars were sought in all cases of infantile deaths, and were obtained in connection with 71. Twenty of them were stated to be breast fed, and 51 artificially (not naturally) fed.

Of the 20 breast-fed infants, five died of whooping cough, and three others of bronchitis, while four deaths were attributed to convulsions. One death was certified as due to marasmus, one to gastritis, one to peritonitis, one to meningitis, while four died through premature birth. None of the deaths among breast-fed infants were attributable to diarrhœa. This is particularly noteworthy in view of my former remarks, and confirms the experience of former years that breast-fed infants are almost immune to epidemic diarrhœa.

The explanation of this was fully referred to in my annual report for 1904. It is a remarkable fact that while in 1904 sixty-eight infants, and in 1905 twenty-one infants died of diarrhœa, not one of these 89 deaths occurred among infants at the breast alone. I will but repeat what I said last year, "the easiest and surest path of safety for infants during the hot months is natural feeding *at the breast.*

## Epidemic Enteritis.

The infant deaths certified as due to *zymotic* diarrhœa were so certified during the weeks shown in the following table.

| Week Ending. | Number of Deaths Certified as due to Epidemic Diarrhœa. |
|---|---|
| August 5th, 1905... ... ... | 1 |
| August 12th, 1905 ... ... | 1 |
| August 19th, 1905 ... ... | 2 |
| August 26th, 1905 .. ... | 2 |
| (5 Days) August 31st, 1905 ... | 4 |
| (9 Days) September 9th, 1905 ... | 8 |
| September 16th, 1905 ... ... | 1 |
| September 23rd, 1905 ... ... | — |
| September 30th, 1905 ... ... | — |
| October 7th, 1905 ... .. | 1 |
| | 20 |

When once a case of zymotic diarrhœa occurs in a fly-ridden district, each succeeding week sees a larger incidence of the disease, until a cold night creates havoc among the flies. The flies act as *carriers* of the diarrhœa germs from one case to another. Hence the importance of insisting that all soiled linen should be immediately placed in a weak disinfectant liquid, and should on no account be allowed to lie about exposed in a room.

The first death which occurred in the summer of 1905 was that of a visitor's child—brought down with the disease. The parents had left before I learned of the death. I do not as a rule learn much as to the incidence of the disease except through the death returns. It is a question worth consideration, whether it would not be desirable, if possible, to have cases of diarrhœa among infants under twelve months of age notifiable during the six or eight weeks of the usual prevalence. The chief reason against this as a measure promising much success is the extreme rapidity with which the disease often runs its course, frequently exhausting the strength of the infant in 48 hours or so.

During the past year I adopted the measure of sending out precautionary pamphlets in the month of July, paying special attention to the districts which are usually affected. I think some good resulted from this, and I am encouraged to repeat the procedure.

Particulars obtained on inquiry into 18 deaths from epidemic diarrhœa in the hot season when analysed give the following results as to character of food and prevalence of flies :—

| Breast Fed Entirely. | Artifically Fed. | | | | | Prevalence of Flies. |
|---|---|---|---|---|---|---|
| | Breast & other Food | Cow's Milk alone | Cow's Milk and other Food | Condensed Milk alone | Condensed Milk and other Food | |
| 0 | 1 | 2 | 3 | 3 | 9 | Abundant 16<br>Moderate 1<br>Few ... 1 |

The only case in which few flies were noticed was that of a very young infant only a month old, which was being fed on condensed milk and other food. In all other instances flies were numerous, and organic deposits, either in the form of refuse in brickfields, old rags and bones, stables, or fowl-roosts, were within fly-striking distance.

It is a satisfactory feature, particularly in view of the precautions enforced in the Borough, to note the very small proportion of cases in which cow's milk alone was the article of diet. As a matter of fact, in one of the two cases the milk was obtained direct from Theydon Bois, and not obtained locally.

# Notifiable Zymotic Diseases.

The following table shows the number of notifications for each month in the year 1905:—

| | Small Pox | Scarlet Fever | Diphtheria, Membraneous Croup | Croup | Typhoid Fever | Puerperal Fever | Erysipelas | Total for each Month, notified | Subsequently withdrawn | | | Imported | | | Not the Disease | Net Number probably arising in the Borough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Diphtheria | Typhoid Fever | Scarlet Fever | Diphtheria | Typhoid Fever | Scarlet Fever | | |
| January ... | | 2 | 9 | | 2 | | 1 | 14 | | 1 | | 1 | | 1 | | 11 |
| February | | 1 | 4 | | 1 | | 2 | 8 | | | | 1 | | | | 7 |
| March .. | | 2 | 11 | | | | 2 | 15 | | | | | | | 1 | 14 |
| April .. | | 8 | 6 | | | | 1 | 15 | | | | | | 3 | | 12 |
| May .. | | 4 | 6 | | 1 | | 2 | 13 | | | | 2 | | 1 | | 10 |
| June | | 2 | 3 | | | | 1 | 6 | | | 1 | 2 | | | | 3 |
| July . | | 3 | 3 | | 2 | | | 8 | | | | | 1 | | 1 | 6 |
| August | | 8 | 4 | | 6 | | | 18 | | 1 | 1 | 3 | 1 | 1 | 1 | 10 |
| September | | 10 | 3 | | 7 | | 2 | 22 | | 1 | 2 | 1 | | 4 | | 14 |
| October . | | 7 | 9 | | 2 | | | 18 | | | | | | | 1 | 17 |
| November | | 23 | 12 | | 1 | | 3 | 39 | | | | 1 | | 1 | 2 | 35 |
| December | | 17 | 6 | | 1 | | 3 | 27 | 2 | | 1 | | | 1 | | 23 |
| | | 87 | 76 | | 23 | | 17 | 203 | 2 | 3 | 5 | 11 | 2 | 12 | 6 | 162 |

## Scarlet Fever.

87 notifications were received during the year, of these 12 were definitely imported cases, and 5 others were withdrawn, leaving a nett number of 70 cases arising in the Borough.

### Diphtheria.

76 notifications were received in 1905. Of these, 11 were imported and 2 withdrawn, leaving 63 nett cases arising in the Borough.

### Typhoid Fever.

There were 23 notifications during the year. Of these 2 were imported cases, and 3 were withdrawn, leaving 18 nett cases arising in the Borough. One of these, which was treated at home, was certified as having died of Enteric Fever, and Acute Miliary Tuberculosis, and should be excluded from the statistics as no post mortem examination was made.

### Small Pox.

No case of this disease occurred in 1905.

Calculating on the gross number of notifications the incidence of notifiable zymotic disease per 1,000 persons of the resident population was in 1905, 4.3 as against 4.0 in 1904, 6.8 in 1903, and an average of 9.7 for the ten years, 1895—1904. Calculating on the nett number arising in the Borough (including contacts with definitely known imported cases), the incidence per 1,000 resident population was 3.5.

## Further Notes.

### Scarlet Fever.

During 1905 87 notifications were received—no fewer than 47 of these occurring in the last quarter of the year, following on the markedly increased incidence in the autumn in London, and in the great extra-Metropolitan Boroughs lying between London and Southend. Twelve of the cases were definitely imported and several of the remainder were traced to contact with visitors from infected districts.

The numbers of notified cases in previous years were 50 in 1904, 73 in 1903, 109 in 1902, 99 in 1901, and 142 in 1900.

The number of infected houses during 1905 was 67. There occurred in two houses four cases; in five houses three cases; in four houses two cases; in 56 houses one case.

Generally speaking the multiple notifications were made on the same day—but in one instance, three cases occurred at intervals. This led to further enquiry—which led to my tracing the recurring infection to a servant girl from East Ham. When the first case occurred this girl had been only a week or so in the house, but when questioned, strenuously denied that she had been ill recently. When, however, the next two cases occurred, she inadvertently said to the ambulance nurse who was superintending the removal of the patients, "That is just what I was like when I was ill at home." This being reported to me, I insisted on examining the girl, and found she had a nasal ulcer and discharge. Further inquiry showed that she had been ill a few weeks previously at East Ham with an illness which was diagnosed as "Tonsillitis"—but the significant fact that within a week of the onset of her illness two of her brothers had been removed to Hospital with Scarlet Fever removed all doubt in my mind as to the real nature of her previous illness. I communicated with the Medical Officer of Health for East Ham, who communicated with the family doctor, who also communicated with me. In spite, however, of the two cases in her own home, following shortly on her own illness, and the three cases following on her advent in Southend, he maintained that he was of opinion that the girl had not had Scarlet Fever. Being myself absolutely certain that she had, I admitted her to the Scarlet Fever Ward at the Sanatorium until her nasal ulcer healed, when she was discharged and no further trouble arose.

Primâ facie this appeared to be a case for prosecution, but the parents sheltered themselves behind the doctor's opinion, and the doctor stoutly maintained that in his opinion the girl had not had Scarlet Fever. The facts were reported to the Health Committee, and were also communicated to the Medical Officer of Health for East Ham, but no further action was taken. A "return" case from contact with a patient discharged from a M.A.B. Hospital, occurred in April.

In 22 cases, or 25 per cent. of the whole number, I found that infection was almost certainly acquired at School. This was most marked in the months of November and December, when two of the large provided schools were involved. For further particulars see under "Schools."

## Typhoid Fever.

The history of Typhoid Fever in Southend during the year 1905 is extremely interesting.

I will, first of all, give the weekly notifications and deaths from Typhoid Fever since the beginning of the year (1905) which have come to my knowledge through the Notification Acts and the Sub-Registrars' Returns as follows :—

| Consecutive number of Notification | Week ending | Number of Notifications | Most Probable cause after exhaustive enquiry | Admitted to Hospital | Treated at Home | Remarks |
|---|---|---|---|---|---|---|
| | Jan. 7th | | | | | |
| | ,, 14th | | | | | |
| | ,, 21st | | | | | |
| 1 | ,, 28th | 2 | (1) not traced. The patient too ill to be questioned; subsequently died. | ... | yes | Subsequently died |
| 2 | ... | | (2) not typhoid fever; subsequently withdrawn | ... | ... | The case withdrawn Came into Hospital, but had not the disease, but General Tuberculosis (P.M. examination) |
| | Feb. 4th | | | | | |
| 3 | ,, 11th | 1 | Flat fish | ... | yes | Recovered |
| | ,, 18th | | | | | |
| | ,, 25th | | | | | |
| | Mar. 4th | | | | | |
| | ,, 11th | | | | | |
| | ,, 18th | | | | | |
| | ,, 25th | | | | | |

| Consecutive number of Notification | Week ending | Number of Notifications | Most Probable cause after exhaustive enquiry | Admitted to Hospital | Treated at Home | Remarks |
|---|---|---|---|---|---|---|
| | April 1st | | | | | |
| | ,, 8th | | | | | |
| | ,, 15th | | | | | |
| | ,, 22nd | | | | | |
| | ,, 29th | | | | | |
| | May 6th | | | | | |
| | ,, 13th | | | | | |
| | ,, 20th | | | | | |
| | ,, 27th | | | | | |
| 4 | June 3rd | 1 | Oysters | yes | ... | Recovered |
| | ,, 10th | | | | | |
| | ,, 17th | | | | | |
| | ,, 24th | | | | | |
| | July 1st | | | | | |
| 5 | ,, 8th | 1 | Oysters | yes | ... | Subsequently died |
| 6 | ,, 15th | 1 | Imported | ... | yes | Subsequently died |
| | ,, 22nd | | | | | |
| | ,, 29th | | | | | |
| | Aug. 5th | | | | | |
| 7 | ,, 12th | 2 | 1, Flies carrying typhoid germs from an infected privy | yes | ... | Recovered |
| 8 | ... | ... | 2, Leigh Cockles | yes | ... | Died |
| | ,, 19th | | | | | |
| 9 | ,, 26th | 2 | 1, Flies | yes | ... | Recovered |
| 10 | ... | ... | 2, A doubtful case | ... | yes | Recovered |
| 11 | Sept. 2nd | 2 | 1, Flies | .. | yes | Died |
| 12 | ... | ... | 2, Imported | yes | ... | Recovered |

| Consecutive number of Notification | Week ending | Number of Notifications | Most Probable cause after exhaustive enquiry | Admitted to Hospital | Treated at Home | Remarks |
|---|---|---|---|---|---|---|
| 13 | ,, 9th | 1 | Not typhoid (withdrawn) | yes | ... | Visitor, Cirrhosis of Liver and Dropsy and Enteritis (P.M.) (withdrawn) |
| 14 | ,, 16th | 2 | 1, Leigh Cockles | yes | ... | Recovered |
| 15 | ... | ... | 2, (cleaned a dirty house) | yes | ... | Recovered |
| 16 | ,, 23rd | 3 | 1, Not typhoid (withdrawn) | ... | ... | Withdrawn |
| 17 | ... | ... | 2, Fried Fish ? Contact ? | ... | yes | Recovered |
| 18 | ... | ... | 3, Oysters | yes | ... | Died |
| 19 | ,, 30th | 1 | Leigh Cockles | ... | yes | Died |
|  | Oct. 7th |  |  |  |  |  |
| 20 | ,, 14th | 1 | Flat Fish (see Appendix 3) | ... | yes | Recovered (a doubtful case) |
| 21 | ,, 21st | 1 | Whelks (ditto) | yes | ... | Recovered |
|  | ,, 28th |  |  |  |  |  |
|  | Nov. 4th |  |  |  |  |  |
| 22 | ,, 11th | ... | Secondary through Laundress (see Appendix 3) | ... | yes | Died. Doubtful case. Widal negative. Death certified as both Enteric Fever and Acute Miliary Tuberculosis |
|  | ,, 18th |  |  |  |  |  |
|  | ,, 25th |  |  |  |  |  |
|  | Dec. 2nd |  |  |  |  |  |
| 23 | ,, 9th | 1 | Winkles | yes | ... | Recovered |

It will be seen that during the quarter ending September 30th, 1905, there were fifteen notifications of Typhoid Fever and six deaths from this disease registered in the Borough. Two of the fifteen notifications were subsequently withdrawn. The Registrar General reported seven deaths from fever for the quarter. This seventh death is no doubt the case of a man who was sent into the Rochford Infirmary about the end of July from Bournes Green, Southchurch, as suffering from some other complaint. He was from there transferred as a case of Typhoid Fever to the Rochford Isolation Hospital, where he died. I only learnt of this case *indirectly, through my enquiries,* and I venture to think that it is desirable that the Rochford Rural District Council or the Rochford Board of Guardians should receive an intimation from the Local Government Board to instruct their Medical Officer to communicate at once to me the name and address of any person suffering from an infectious disease, who has through mistaken diagnosis or other cause been sent into the adjoining district without my knowledge. In the present case it was not until further cases arose in the old fashioned privy district of Bournes Green in which this man lived, that I became aware of his previous illness and death. By this time, flies, which at this season infested the district, had had ample opportunity of carrying the specific infective material from the undisinfected privy (used by this man prior to his removal to Rochford Infirmary) to other houses in the neighbourhood. Of course, when I learnt of his illness, I had the privy he had used disinfected in addition to those privies belonging to the other houses where the other cases occurred, and after this no further cases arose. But prior to these measures being taken no less than three subsequent cases occurred at Bournes Green which I attribute to the carriage of infection by flies from the undisinfected excreta of this man (and possibly that of the next patient) prior to my becoming acquainted with the illness of either.

From the tabular statement I have made, one thing is very evident, and that is the low morbidity rate as compared with the high fatality rate.

The following extract from my special report deals with the whole series, whether imported or indigenous. Out of only 20 persons permanently notified to me between January 1st and December 31st, as suffering from Typhoid Fever no fewer than eight died. The facts may be put in tabular form for convenience. (See Table Appendix 2.)

It will be noted that 11 out of the 20 cases were admitted to Hospital, and of these 3 died (one admitted moribund). Of the 9 cases treated at home 5 died.

Thus the case mortality is 40 per cent.

For Hospital treated cases (11 in number) 27.27.

For Home treated cases (9 in number) 55.5 per cent.

If the case which died in the Rochford Isolation Hospital (which was never notified in Southend) be included, the case mortality rises to no less than 42.8 per cent. But though the attacks of Typhoid Fever which occurred in 1905 were on the whole of a severe character, the consoling fact yet remains that the incidence of Typhoid Fever on the general population maintains a wonderfully low rate, as compared with former years before I proved the casual connection of polluted cockles, especially from a notorious creek with Endemic Typhoid Fever in Southend. The disease is no longer epidemic. Only a few sporadic cases occur.

Calculated on 16 indigenous cases occurring among an estimated population of 46,380 (see Table Appendix I) the indigenous incidence rate for 1905 is only 0.34 as compared with an average incidence rate of 3.76 for the years 1895 to 1904, and 1.6 for the years 1901 to 1904. The zymotic death rate for 1905 was 0.17.

I have again to draw attention to the disproportionate incidence of Typhoid Fever among the much smaller part of the population which eat shell-fish as compared with the very few cases among the enormously preponderating number of inhabitants who do not eat shell-fish. I have already referred in some detail to the interesting small outbreak in the Bournes Green neighbourhood, which I unhesitatingly attribute to the agency of flies carrying infective material from infected privies.

In my monthly report for the month of July I reported to the Health Committee as follows:—

"One case was imported from the Steamship "Orotava." The other followed the eating of oysters from an unknown source, both proved fatal."

In my monthly report for the month of August I report five notifications and an additional one, subsequently withdrawn. I further reported on the notifications as follows :—

"One case was imported. Two others gave a history of eating cockles, in one instance purchased from a hawker from Leigh. Exhaustive enquiry into the two remaining cases failed to show sufficient evidence to implicate any particular article of food or drink, but they occurred in a privy district on the outskirts of the Borough, whence a previous case had been sent into the Rochford Infirmary, and thence transferred to the Isolation Hospital at Rochford. I found flies numerous in the neighbourhood, and it is quite possible that these had acted as carriers of infection in the same manner as I have shown to be probable in the spread of Epidemic Diarrhœa."

In my report for the month of September I reported five notifications and two additional notifications subsequently withdrawn, and further said :—

"In three cases shell-fish had been eaten within two or three weeks of onset. In one case the oysters were stated to have come from Brightlingsea where there is a bed within 300 yards of a sewer effluent outfall. In another case cockles from Leigh had been eaten. The condition of the Leigh Creek needs no further comment. In the third case whelks from Leigh and cockles from elsewhere had been consumed."

"The other two cases occurred in persons whose occupation might have brought them into contact with infected matter from a previous case, prior to notification, or which had escaped notification. [Occasionally, but very rarely, in some persons Typhoid Fever is of so mild a type that a doctor is not even consulted. Although there has been very little Typhoid Fever, yet on the whole the disease this year has been of a severe type with a large fatality rate, especially among the cases which have not been recommended for admission to Hospital, yet I know of one probable case of a very mild type which I traced through another notification.] There were only five notifications of Typhoid Fever upheld during September, 1905, among a population of over 45,000, as compared with an average of 16 notifications during September in the years 1895 to 1903 among an average population of not more than 25,000."

During the quarter ending September 30th, 1905, the indigenous Typhoid Fever notifications numbered 11, as compared with an average of 24.5 for the eleven years 1895 to 1905 inclusive. Appended is a table showing the monthly number of Indigenous cases of Typhoid Fever for each month from 1895 to 1905 inclusive. In making my investigations I carefully inquired into the possibilities of infection being carried by milk, or water, or by direct personal contact. There was no evidence whatever to implicate any particular water or milk supply.

In one case it appeared possible that the infection might have been acquired from a fellow labourer on a farm in the Rochford Rural District.

In the weekly returns which I have given on a previous page, I have stated the most probable source of infection after detailed inquiry into the known possible channels of infection. These may be summarised in tabular form as shown in Appendix 3A.

The history of Typhoid Fever recorded above is still further evidence as to the dangers of eating uncooked or imperfectly cooked fish from polluted sources.

It also affords evidence of the dangers of a case of Typhoid Fever arising in a privy district during the fly season, particularly if the disease is not recognised, or the patient is removed from the district before a correct diagnosis is made, with consequent failure to notify the case.

On page 53 of my Annual Report for 1904 I referred specifically to Bournes Green in the following words :—" Bournes Green is a small village separated by about a mile of fields from the Urban part of the Borough, and is undrained. The older houses are provided with privies, while a few newer houses drain into cesspools. The district is low lying. . . . ."

From the above description it is evident that Bournes Green cannot be included in any general drainage scheme of the Borough at the present time. Some of the newer houses built in the neighbourhood drain into cesspools. These are a constant source of trouble requiring almost periodical intimation notices, because after a day or two's rain the cesspools begin to overflow, causing a nuisance.

I have previously drawn the attention of the Council to this objection to cesspools in the outlying parts of the Borough. Most of the privies at Bournes Green are very old and consist simply of a hole dug in the earth, over which is placed a box seat, which is screened from observation by a small wooden shed arrangement provided with a door. Occasional cleansings are accomplished by provision made at the rear of the structure.

The whole arrangement is very primitive and is unsatisfactory, acting as a breeding place for flies which can carry offensive or disease producing germs direct from the privies to the human habitations close by.

In my opinion, especially in the fly season, the old fashioned privy is a dangerous nuisance in connection with any dwelling house. In its stead the Sanitary Authority should endeavour to require to be provided a properly constructed privy or earth closet to conform with the provisions with respect to such structures which are laid down in the byelaws for new streets and buildings which are already in force in the Borough.

We have already succeeded in having some old fashioned privies converted in this way, and it is my intention, with the support of this Committtee, to extend this requirement to all old fashioned dangerous privies in the Bournes Green district.

The case notified during the second week of November seemed to illustrate a possible source of infection in almost any family, however careful the members might be as to dwelling house, food, &c. My enquiries into cases of infectious disease always include the laundry arrangements made. In the present instance the home washing was given to a person residing in Rochford, but the exact address was not known. I enquired of the Medical Officer of Health for Rochford Rural District whether he had within the last month or two received a notification of Typhoid Fever of the name given me. He replied in the affirmative, and kindly gave me the address. By further enquiries I was able to satisfy myself that the address was that of the laundress in question. As enquiry on other lines had hitherto failed to elicit any evidence of any other method of infection, I provisionally attributed the source of infection in this case to the handling of clean linen about to be returned by some person whose hands were infected by the case of Typhoid Fever at the address of the Laundress, or by the convalescent patient himself, when deemed to be cured and discharged from Hospital.*

Power is now given by the Factory and Workshops Act of 1901 to any Sanitary Authority to control the conditions under which work is done in infected dwellings in connection with the making, cleaning, washing, &c., of wearing apparel.

Hitherto in this Borough my own instructions have been carried out without question in any case where it was necessary to prohibit for a time the sort of work in question. No occasion has so far arisen in connection with Typhoid Fever to compel me to advise the Council to exercise their prohibitive powers under the Act. The Rochford Laundry is of course not under the control of the Southend Local Authority in any way, and the matter has only come to my knowledge at this late stage through the enquiries I have made. I am not in a position to say that prohibitive measures were not attempted, nor do I for a moment suggest any default in this respect. With an insidious disease like Typhoid Fever the mischief may be done before notification, and before any prohibitive powers could be exercised.

Copies of this report being sent as required to the Local Government Board and to the County Council, the former enquired what action the Council proposed to take in regard to the drainage of Bournes Green. The Health Committee, in January, 1906, ordered that notices be served upon the owners of the privies at Bournes Green for the same to be put into a sanitary condition, and that proceedings be taken in default of compliance therewith.

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* Though the above history to some extent supports the diagnosis and notification of Typhoid Fever, I must confess that I am not without doubt, as to the actual nature of this case, because (apart from a negative widal reaction), no *post mortem* examination was made and yet the death certificate attributed death to both Enteric Fever and Acute Miliary Tuberculosis. The symptoms of these two diseases so closely simulate one another that they are often confounded, and it's a pity no *post mortem* was made to clear up the diagnosis for statistical purposes.

# Appendix 1.

## Typhoid Fever.

Table showing Monthly Notifications of Indigenous Cases :—

| | 1895. | 1896. | 1897. | 1898. | 1899. | 1900. | 1901. | 1902. | 1903. | 1904. | 1905. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 8 | 7 | 3 | 4 | 9 | ... | 3 | 3 | 3 | 1 | 1 |
| February | 8 | ... | 1 | 4 | 1 | 2 | ... | 4 | ... | 1 | 1 |
| March ... | 1 | 1 | ... | 4 | 2 | 3 | 1 | 1 | ... | 1 | ... |
| April ... | 2 | ... | 4 | 1 | 3 | 3 | ... | 2 | ... | ... | ... |
| May ... | 1 | 1 | 1 | 3 | ... | 1 | 2 | 2 | 2 | ... | 1 |
| June ... | 4 | 1 | 1 | 6 | 1 | 1 | 1 | 20 | ... | ... | ... |
| July ... | 2 | 4 | 1 | 7 | 4 | 3 | 4 | 19 | 4 | ... | 1 |
| August ... | 8 | 21 | 8 | 4 | 2 | 1 | 8 | 9 | 3 | 4 | 4 |
| September | 17 | 22 | 21 | 14 | 14 | 18 | 10 | 12 | 15 | ... | 6 |
| October ... | 8 | 17 | 17 | 16 | 9 | 10 | 5 | 20 | 22 | 1 | 1 |
| November | 12 | 3 | 6 | 23 | 5 | 8 | 6 | 2 | 10 | 2 | ... |
| December | 17 | 9 | ... | 9 | 2 | 5 | 5 | 7 | 1 | ... | 1 |
| Total ... | 88 | 86 | 63 | 95 | 52 | 55 | 45 | 101 | 60 | 10 | 16 |

Population

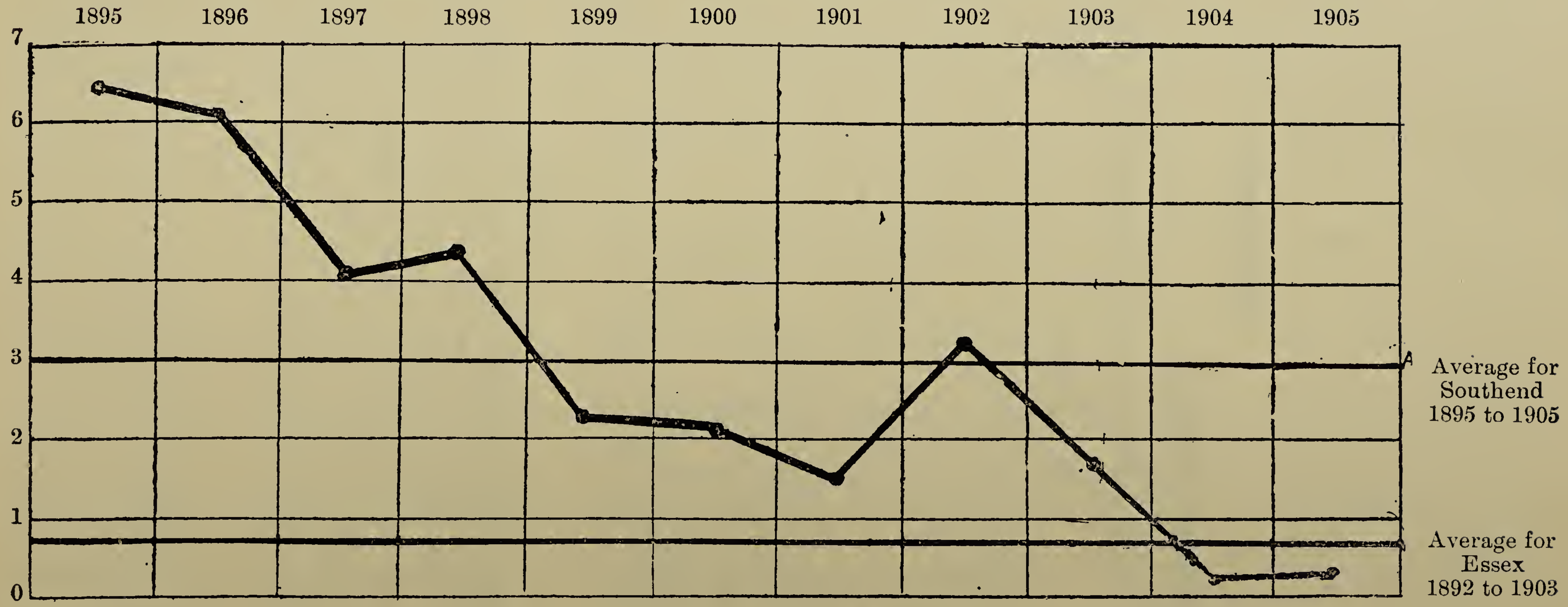
| 1895. | 1896. | 1897. | 1898. | 1899. | 1900. | 1901. | 1902. | 1903. | 1904. | 1905. |
|---|---|---|---|---|---|---|---|---|---|---|
| 16,203 | 17,529 | 19,302 | 22,583 | 24,710 | 27,721 | 27,193 | 33,573 | 37,283 | 41,944 | 46,383 |

Rate per 1,000

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 6.4 | 6.1 | 4 09 | 5.4 | 2.3 | 202 | 1.51 | 3..01 | 1.60 | 0.23 | 0.34 |

# Typhoid Fever.

Incidence Curve per 1000 Population, years 1895 to 1905.



# Appendix 2.

| | | Cases Notified | Admitted to Hospital | Died in Hospital | Treated at Home | Died at Home |
|---|---|---|---|---|---|---|
| Typhoid Fever ... ... | | 20 | 11 | 3 | 9 | 5 |
| Additional Cases Notified and subsequently withdrawn | General Tuberculosis (P.M.) | 1 | 1 | 1 | — | — |
| | Cirrhosis of Liver (P.M.) | 1 | 1 | 1 | — | — |
| | Renal Abscess Operation | 1 | — | — | 1 | 1 |
| | | 23 | 13 | 5 | 10 | 6 |

# Appendix 3.

Tabular Statement of results of enquiry into the notified Typhoid Fever cases between January 1st and ~~November 25th~~ December 31st, 1905.

| Number Consecutive | Month | Flies | Milk or water supplies | Shellfish or Crustaceans | Flat-fish | Contact with previous case | Laundress illness at Home. | Occupation | Imported | Alternatives. | Not traced |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Jan. | (Not | typhoid | fever, withdrawn) | | ... | ... | . | ... | .. | ... |
| 2 | ,, | ... | ... | ... | ... | ... | ... | ... | ... | .. | 1 |
| 3 | Feb. | ... | ... | ... | Fried Soles from Leigh | ... | ... | ... | ... | ... | Cesspool (no previous case known) |
| 4 | June | ... | ... | Oysters | ... | ... | ... | ... | ... | .. | ... |
| 5 | July | ... | ... | Oysters | ... | ... | ... | ... | ... | *Oysters* or water-cress | ... |
| 6 | ,, | ... | ... | ... | .. | ... | ... | ... | Imported | ... | ... |
| 7 | Aug. | Flies | (From | infected midden p | rivy) | ... | ... | ... | ... | ... | ... |
| 8 | ,, | ... | ... | Cockles (Leigh) | ... | . . | ... | ... | ... | ... | ... |
| 9 | ,, | Flies | ... | Cockles (Halfway) | ... | ... | ... | Refuse screener | ... | Cockles, *Flies* or occupation | ... |
| 10 | ,, | Flies | ... | Shrimps | ... | ... | ... | .. | ... | ... | ... |
| 11 | ,, | ... | ... | ... | ... | ... | ... | ... | Imported | ... | ... |
| 12 | Sept. | (Not | typhoid | fever, withdrawn) | ... | ... | ... | ... | ... | ... | ... |
| 13 | ,, | ... | ... | Cockles (Leigh) | ... | | ... | | ... | ... | ... |
| 14 | ,, | .. | ... | .. | ... | ... | ... | Cleaned out dirty house | ... | ... | ... |
| 15 | ,, | (Not | typhoid | withdrawn) | ... | ... | .. | ... | ... | ... | ... |
| 16 | ,, | ... | ... | | Fried fish | A fellow labourer recently ill with typhoid fever | ... | ... | ... | *Fried fish* or contact | ... |
| 17 | ,, | ... | ... | Oysters | ... | ... | ... | ... | ... | ... | ... |
| 18 | ,, | | ... | Cockles (Leigh) | ... | ... | .. | ... | ... | ... | ... |
| 19 | Oct. | ... | ... | Shrimps | Fried fish | ... | ... | .. | ... | *Fried fish*, shrimps | ... |
| 20 | ,, | ... | ... | Whelks | ... | ... | ... | Greengrocer | ... | Polluted fruit or raw vegetables or *Whelks* | ... |
| 21 | Nov. | ... | ... | ... | ... | .. | 1 (? Typhoid fever) | ... | ... | Probably acute miliary tuberculosis | ... |
| 22 | Dec. | ... | ... | Winkles | ... | ... | ... | ... | ... | ... | ... |

In addition a doubtful case of typhoid fever was notified in August in a house in which there had been a case a year or two ago.

## TYPHOID FEVER, 1905.

### *Summary of Analysis of Cases.*

| | | |
|---|---|---|
| Total Number Notified | 23 | |
| Notifications Withdrawn | 3 | |
| Nett Number of Notifications | 20 | |
| Definitely Imported | 2 | |
| Apparently Indigenous Cases | 16 | 18 |
| Doubtfully Imported | 1 | |
| Doubtful Nature | 1 | |

*Most Probable sources of Infection after full enquiry.*

| | |
|---|---|
| Oysters | 3 |
| Cockles | 3 |
| Other Shellfish | 2 |
| Flatfish | 3 |
| Occupation | 1 |
| Laundry (doubtful case) | 1 |
| Direct Contact with previous case | 0 |
| Milk | 0 |
| Water | 0 |
| Infected Drains | 0 |
| Infected Privies and Flies | 3 |
| Untraced | 1 |

N.B —One of the cases attributed to Oysters had also partaken of Watercress, but there was no further evidence against the Watercress.

One case attributed to other Shellfish had partaken both of Whelks and raw Vegetables of unknown origin.

One of the three cases attributed to imperfectly cooked Flatfish, had also partaken of Shrimps. A second was a fellow labourer with a previous case.

One of the three cases attributed to Flies was employed in screening refuse at Brickfields, and had also partaken of Cockles, and another had also partaken of Shrimps.

| | | | |
|---|---|---|---|
| Number of Infected Houses | | | 20 |
| New Houses | W.C.'s | 6 | 6 |
| | Cesspools | 0 | |
| Old Houses | W.C.'s | 9 | 14 |
| | Privies | 2 | |
| | Earth or Pail Closets | 2 | |
| | Cesspools | 1 | |

The sanitary arrangements of all the 20 Infected Houses were inspected and tested. Note the following results :—

| | |
|---|---|
| Drains Satisfactory (6 new Houses), W.C.'s ... | 13 |
| Earth Closet ... ... ... ... ... | 1 |
| Pail Closet ... ... ... ... .. | 1 |
| Privies .. ... ... ... ... ... | 2 |
| Slight Defects ... ... ... ... ... | 1 |
| Grave Defects ... ... ... ... ... | 2† |
| Total | 20 |

† 1. Defective drains to a cesspool.
2. An air inlet to house drains fixed into wall of pantry, sink pipe defective.

The following table gives the total number of notifications received during 1905 (including those subsequently withdrawn) together with the sex and age, incidence, and the parishes in which the cases occurred. [The result of the Widal test is also given in those cases in which it was applied as an aid to diagnosis.]

It will be seen that in St. John's Parish there were in all 8 notifications, in St. Mary's 3, in St. Alban's 2, in All Saints 7, and in Southchurch 3. One of the cases in St. John's and one in St. Mary's were without doubt imported, a third case (in St. John's) was probably imported, and two in St. John's and one in All Saints were proved to be not cases of Typhoid Fever and were *withdrawn*. The balance of evidence is against one of the two cases in St. Alban's being a case of Typhoid Fever, and another one in St. John's was notified as very doubtful, "no symptoms beyond fever."

The real parish incidence is therefore :—

| St. John's | St. Mary's | St. Alban's | All Saints | Southchurch |
|---|---|---|---|---|
| 3 | 2 | 1 | 6 | 3 |

but the table gives details as to all notifications received as follows :—

| Con-secutive Number | Sex and Age. | Date of Notifica-tion. | Removed to Hospital. | Parish. | Result. | Result of Widal Test. | Probable Origin after full enquiry. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1 | F. 32 | Jan. 26th. | No. | All Saints' | Died. | Not obtained | ? | A hand-flushed W.C. |
| 2 | M. 18 | Jan. 26th. | Yes, on Feb. 7th. | St. John's | Died Feb. 11th. | Negative. | Not Typhoid Fever. (Withdrawn). | General Tuberculosis Post-mortem Exam'n. |
| 3 | F. 11 | Feb. 15th. | No. | St. Mary's | Recovered | Not tested. | Flat fish from Leigh. | House drains to a cesspool |
| 4 | F. 26 | May 29th. | Yes, May 29th. | St John's | Recovered. Discharged June 29th. | Positive. | Oysters of unknown source, purchased from a hawker. | |
| 5 | M. 37 | July 7th. | Yes, July 7th. | St. Alban's | Died July 18th. | Doubtful. | Oysters of unknown origin. | A new house, 1905. |
| 6 | M. 38 | July 10th. | No. | St. John's | Died. | Not tested). | Imported from S.S. "Orotava." | Case notified after death. |
| 9 | F. 33 | Aug. 18th. | No. | St. John's | Recovered. | Doubtful. | ? | A doubtful case. The Dr. reports "no spots or other definite symptoms." |
| 11 | M. 32 | Aug. 29th. | Yes, Aug. 29th. | St. Mary's | Recovered. Discharged Sept. 23rd. | 1st Test doubtful. 2nd Test positive. | Imported. | Patient had been staying at a farm in Surrey, where the Sanitary arrangements were unsatisfactory. |
| 7 | M. 14 | Aug. 8th. | Yes, Aug. 8th. | Southchurch | Recovered. Discharged Sept. 21st. | Doubtful. | An infected privy in an adjoining house through the agency of flies. | A privy district. Flies numerous. An undiagnosed previous case. |

| Consecutive Number | Sex and Age. | Date of Notification. | Removed to Hospital. | Parish. | Result. | Result of Widal Test. | Probable Origin after full enquiry. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 8 | F. 22 | Aug. 9th. | Yes, Aug. 9th. | All Saints' | Died Aug. 27th. | Doubtful. | Cockles from a Leigh hawker. | |
| 12 | F. 20 | Sept. 1st. | No. | Southchurch | Died. | Not tested. | Through flies, as No. 9. Date of onset about Aug. 22nd. | Had shrimps at Leigh, on August 24th. Privy district. |
| 10 | M. 14 | Aug. 25th. | Yes, Aug. 25th. | Southchurch | Recovered. Discharged Oct. 12th. | ? | Through flies, as Nos. 9 and 11. | ? Cockles from Halfway House, but no corroborative evidence. |
| 14 | F. 17 | Sept. 8th. | Yes, Sept. 8th. | All Saints' | Recovered. Discharged Oct. 14th. | Positive. | ? Flat fish.<br>? Dirty house | Flat fish. Cleaned up a dirty house. Mother had diarrhœa, but blood gave a negative Widal. |
| 13 | F. 45 | Sept. 6th. | Yes, Sept. 6th. | Visitor St. John's | Died Sept. 11th. | Negative. | Not Typhoid Fever. (Withdrawn). | Cirrhosis of the Liver. Post-mortem Exam'n. |
| 15 | F. 15 | Sept. 14th. | Yes, Sept. 24th. | All Saints' | Recovered. Discharged Nov. 27th. | Positive. | Leigh Cockles from Hill's shop. | Vomited after eating the cockles. |
| 16 | M. 27 | Sept. 18th. | No. | St. Mary's | Recovered. | Positive. | Fried fish or contact with a Rochford case. | |
| 17 | M. 40 | Sept. 20th. | Admitted Moribund, Sept. 20th. | All Saints' | Died Sept. 22nd. | ? | Oysters from Brightlingsea. | There are oyster beds within about 300 yards of a sewage (treated) outfall. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 18 | M. 36 | Sept. 20th. | No. | All Saints' | Died. | Negative. (3 times tested) | Not Typhoid. (Withdrawn). | Perinephric Abscess. Operation. |
| 19 | F. 23 | Sept. 28th. | No. | All Saints' | Died. | ? | Cockles and whelks from Leigh. | |
| 20 | M. 25 | Oct. 9th. | No. | St. John's | Recovered. | 80 % positive | ? Typhoid.<br>? Fried fish.<br>? Imported.<br>? Shrimps. | Illness of brief duration, probably not Typhoid Fever. |
| 21 | M. 12 | Oct. 21st. | Yes, Oct. 21st. | St. John's | Recovered. Discharged Nov. 17th. | ? | ? Watercress.<br>? Contact.<br>? Shellfish (Winkles) | House drains tested in 1904. |
| 22 | M. 40 | Nov. 8th. | No. | St. Alban's | Died. | Negative. | ? Typhoid.<br>? Laundry. | Probably not Typhoid. Death certificate gave both Enteric Fever and Acute Miliary Tuberculosis as causes of death. No Post-mortem Exam'n. |
| 23 | M. 34 | Dec. 9th. | Yes, Dec. 9th. | St. John's | Recovered. Discharged Jan. 3rd, 1906. | Positive. | Winkles from a hawker. | A mild case. |

The above is a tabulated list of every notification of Typhoid Fever received during the year 1905.

Three (Nos. 2, 13 and 18) certainly proved to be not Typhoid Fever and one (No. 22) was probably a case of Acute Tuberculosis. This view is supported by the negative Widal re-action and the Death Certificate. Considering the wording of the Certificate it seems an astonishing thing that a post-mortem examination was not made—as it stands the Certificate is absolutely worthless for statistical purposes. The balance of evidence available is distinctly against Enteric Fever. Omitting these four cases as not cases of Typhoid Fever there remain 19 notifications to be dealt with. The history of two of these (Nos. 6 and 11) cases was distinctly in favour of the disease having been contracted elsewhere, and a similar remark applies to a third case (No. 20) of somewhat doubtful nature. Omitting these, there were apparently 16 notified cases of Typhoid Fever during 1905 which originated in the district. Of these one (No. 9) was stated to have very indefinite symptoms. The probable origin of the 15 remaining cases is given in summarised form as follows :—

Probable origin of 15 Indigenous Cases of Typhoid Fever occurring in Southend-on-Sea during 1905 : —

| | |
|---|---|
| Shellfish ... ... . . | 8. |
| Flat fish ... .. ... | 3. |
| Flies (as carriers of infection) ... | 3. |
| Raw Vegetables... ... ... | 0. |
| Water ... ... ... ... | 0. |
| Milk ... ... ... ... | 0. |
| Contact ... ... ... | 0. |
| Not traced ... ... ... | 1. |

Thus in

| | | | | | |
|---|---|---|---|---|---|
| 8 | cases, | or 55 per cent., | the most probable source was | Shellfish | 73·3 % |
| 3 | ,, | or 23 per cent. | ,, ,, | Flat fish | |
| 3 | ,, | or 20 per cent. | ,, ,, | Flies carrying infection from infected privy. | 20 % |
| 1 | ,, | or 6·6 per cent. | ,, ,, | ...Not traced | ... 6·6 % |
| | | | | | 99·9 % |

In addition to the eight cases imputed to shell-fish, two of the three cases ascribed to the agency of flies had partaken of shell-fish.

One of the two cases omitted as doubtful gave a history of fried flat-fish. If flat-fish and shell-fish be classed together it will be noted that over 70 per cent. of the cases of Typhoid originating in the Borough in 1905 could be attributed to polluted fish as the most probable source, after careful investigation and judicious weighing of the evidence obtained. One case in the above summary attributed to flat-fish might have been secondary (through contact with a fellow labourer).

The question of the connection of fried flat-fish with Typhoid Fever is one of considerable interest. In 1900 Dr. W. H. Hamer, Senior Assistant Medical Officer of Health to the London County Council, attributed an outbreak of Typhoid Fever in Southwark to fried fish—and my own enquiries since 1901 certainly tend to make me view fried fish with increased suspicion. In the processes of cleaning and gutting, or if eaten when imperfectly cleaned and cooked, fish obtained from specifically fouled waters must correlate some risk if specific dejecta have crossed their path while in the water.

Another possible source of contamination is in the fish shop or at the home of the consumer—where specifically infected shell-fish may be laid in juxta-position to other fish as I pointed out in 1902 (Annual Report, 1902, page 40).

In districts where there are insanitary privies or midden privies the dangers arising from an unknown case of Typhoid Fever coming into the district are accentuated when flies abound in the summer and autumn. It is to the agency of these insects I attribute three cases which occurred in Bournes Green in the late summer, following upon an unrecognised case, which was never notified, but was sent to Rochford as suffering from some other disease, and later recognised as Typhoid Fever.*

Owing to a communication from the Local Government Board I made a special report early in December, 1905, on Typhoid Fever in the Borough from January to the end of November. In the present report I have incorporated the case notified in December so as to complete the series.

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* It is of some interest to note that the Widal reaction was doubtful in two of the three cases which were notified from Bournes Green (the third was not tested). The clinical symptoms were typical. Possibly a paratyphoid bacillus was the real infective germ in these cases.

## Diphtheria.

In the new (August, 1905) edition of Whitelegge's well-known Manual of Hygiene and Public Health, it is stated at page 454 that "the notification of diphtheria can scarcely be complete or satisfactory owing to the number of slight and almost undistinguishable cases; and hospital isolation upon an adequate scale has not yet been tried."

Though, as a general statement, this may be correct, I am of opinion that, so far as the Borough of Southend-on-Sea is concerned, both as to notification and hospital isolation, diphtheria has been during the last three or four years probably as adequately dealt with as Scarlet Fever. This has been largely due to the effective administration of the Public Health Laboratory. Medical practitioners have been encouraged to send in swabs not only from doubtful cases, but from any case of sore throat, where there was any reason to suppose the Diphtheria bacillus *might* be a causal agent, and very numerous swabs from the throats of "contacts" have also been examined. As the result of bacterioscopic examination made by myself, numerous notifications of Diphtheria have been made, where the clinical signs of Diphtheria have not been in evidence. On the other hand a few cases have occurred where the *clinical* signs would in bygone days have justified the diagnosis of Diphtheria (at any rate as regards membranous formation) but which repeated bacterioscopic examinations demonstrated to be due to other causal agents than the Diphtheria bacillus. In these instances it has been possible to prevent the notification of these cases as Diphtheria, or to secure the withdrawal of premature notification.

The number of notifications of Diphtheria has therefore been based chiefly on the results of bacterioscopic examination. Though these notifications exceed in number the notifications which would have been made on the clinical signs observed in the particular instances notified, we have been enabled to obtain a truer estimate of the actual number of truly infective sore-throats of a diphtheritic nature than was possible before the Public Health Laboratory was in full working order.

As a further result of great public-health importance I have, as Medical Officer of Health, been able to exercise a very satisfactory control over any outbreak of diphtheria in the Borough.

Though it is quite possible (if not probable) that some cases of diphtheritic infection have escaped detection and notification, I do not think the proportion of cases which have so escaped exceeds the proportion of cases of Scarlet Fever which have escaped detection.

The number of notifications on the above lines during the year 1905 was 76. Of these, eleven cases were definitely imported into the Borough; two cases, prematurely notified, were withdrawn; while notification was adhered to in four cases, in spite of the bacterioscopic results being repeatedly negative. In the majority of cases notification was withheld until supported by bacteriological examination, the case in the meantime being strictly isolated. Where home conditions rendered isolation at home impracticable, the case was notified as Diphtheria and recommended for admission to Hospital, the Certifying Practitioner in the majority of instances kindly consenting to withdraw the notification if the subsequent observation of the case negatived the provisional diagnosis of Diphtheria.

By the kind co-operation of the majority of the medical practitioners in the Borough on these eminently practical and satisfactory lines, I have felt but little anxiety as to an outbreak of Diphtheria (due to an imported case, or otherwise arising) getting out of hand. As a matter of fact, each outbreak has been speedily controlled—but it has meant very assiduous and laborious work on my part in the Public Health Laboratory. This will be realised when it is mentioned that though there were only 76 notifications of Diphtheria, I examined no fewer than 445 swabs submitted by Medical Practitioners for bacterioscopic aid in the diagnosis of Diphtheria.

## Free Supply of Antitoxin for Poor Patients.

In addition to the provision of a Public Health Laboratory the Town Council in May, 1905, confirmed a resolution of the Health Committee authorising me to refund to medical practitioners the cost expended on antitoxin used for preventive purposes in connection with cases of Diphtheria arising in the Borough, and certified to me to have been requisite, provided that I was satisfied that the patients were too poor to pay the cost of the antitoxin. The annual expenditure in this direction is limited to £5, this amount being in my opinion sufficient to cover any such applications for repayment as may be made.

During the eight months of 1905 from the passing of the resolution the small sum of only 5s. 2d. was refunded in this manner. In addition Diphtheria antitoxin of the value of 14s. 2d. was supplied at cost price to practitioners.

The monthly incidence of Diphtheria, as shown by notifications received from medical practitioners was as follows during 1905 :—

| | | | | | |
|---|---|---|---|---|---|
| January ... | ... | 9 cases. | July ... | ... | 3 cases. |
| February ... | ... | 4 ,, | August ... | .. | 4 ,, |
| March ... | ... | 11 ,, | September | ... | 3 ,, |
| April ... ... | ... | 6 ,, | October... | ... | 9 ,, |
| May ... ... | ... | 6 ,, | November | ... | 12 ,, |
| June ... . . | ... | 3 ,, | December | ... | 6 ,, |

Of the above notifications, in addition to two withdrawn, five others were not true Diphtheria in my opinion. Against this, one death certified as due to Septic Laryngitis, and three deaths as due to Croup were possibly of a Diphtheritic nature.

The age distribution of the notified cases was as follows :—

| 1 to 5 years. | 5 to 15 years. | 15 to 25 years. | 25 to 65 years. |
|---|---|---|---|
| 16 | 43 | 7 | 10 |

The incidence rate during 1905 was 1.63 per 1,000 population. The Zymotic death rate was very low, only two deaths occurring among the 76 notified cases. One of these was due to Diphtheria immediately following measles, and therefore appears in the death returns (Table IV. of the Local Government Board) under Measles. I propose, however, to include this death in connection with these remarks under deaths from Diphtheria, giving a zymotic death rate of only 0.04, and a case mortality of only 2.63. Assuming that two out of the four cases I have previously alluded to (certified as deaths due to Septic Laryngitis and Croup) were really deaths from Diphtheria, the zymotic death rate would still not exceed 0.08 per 1,000, but the figure based on the available statistics is only 0.04—the same as for 1904—and an exceedingly favourable figure, speaking much for modern methods of administration and treatment.

## A Doubtful Milk Outbreak.

A sudden outbreak during the last week in April and the first three days of May gave me reason to suspect a particular milk supply, but the evidence obtainable was inconclusive. The outbreak was very limited. In all eight houses were involved, four of these having a common milk supply. The outbreak subsided at this point as suddenly as it had begun. I subsequently learned that there had been a case of " sore throat " at the milk purveyor's premises shortly before the outbreak, but I was unable to obtain conclusive evidence as to its nature.

## Secondary Cases.

Eight occurred in infected families. In a considerable number of cases preventative doses of antitoxin were administered to other members of the same family.

## Return Cases.

One occurred from contact with a patient recently discharged from Guy's Hospital, London. No " Return " case occurred from our local Fever Hospital where extraordinary precautions are taken before a patient is discharged—it being my practice not to discharge any patient until all so-called Hoffmann or Diphtheroid Bacilli have quite disappeared as well as all typical bacilli.

## School Cases.

Though a few cases were traced during the year as in all probability due to contact at school, the ordinary measures of exclusion, &c., sufficed, and it was not necessary to close any school during 1905 on account of Diphtheria.

## Hoffmann's Bacillus.

This was the organism found in eight of the notified cases, but I do not share the view expressed by some that this organism is of no importance. In support of this view I have to record that two " contacts " with persons showing " Hoffmann " bacilli developed typical Diphtheria, while the other cases showing " Hoffmann " bacilli were nearly all themselves " contacts " with actual cases of Diphtheria. In my opinion it is not always possible to differentiate between short forms of Diphtheria bacilli and "Hoffmann" bacilli by morphological appearances alone.

## Croup.

Three deaths were ascribed to croup.

## Other Septic Diseases.

Among these one was ascribed to Septic Laryngitis. I have already alluded to the above in my remarks on Diphtheria.

## Erysipelas.

17 cases were notified during 1905.

The age distribution was as follows :—

| 0—5 years. | 5—15 | 15—25 | 25—65 | 65 and over. |
|---|---|---|---|---|
| 1 | 3 | 0 | 11 | 2 |

There is, I think, some subtle connection between Erysipelas and some other infectious diseases (particularly Scarlet Fever), and it is therefore important to have it compulsorily notifiable. Otherwise a secondary case rarely occurs except under conditions of overcrowding.

# Non-notifiable Zymotics.

## Measles.

In my last annual report I pointed out by figures and a curve constructed to show the Measles death rate,, that administrative measures carried out since 1901 were having some effect on the epidemiology of the disease in the Borough. This effect continues, as the following figures clearly show :—

| Year ... ... | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|---|---|---|---|
| Estimated Population ... ... | 17529 | 19302 | 22583 | 24710 | 27721 | 29793 | 33583 | 37283 | 41944 | 46380 |
| Deaths ... ... | 14 | 0 | 12 | 0 | 4 | 11 | 2 | 7 | 3 | 6 |
| Zymotic Death Rate .. | 0.81 | 0.0 | 0.53 | 0 0 | 0.14 | 0.37 | 0.06 | 0.18 | 0.12 | 0.10 |
| Average Death Rate for each year of each 2 yearly cycle | 0.4 | | 0.26 | | 0.25 | | 0.12 | | 0.10 | |

Before active measures of any kind were taken to limit the spread of the disease, the disease followed a two-yearly cycle. A year of high mortality followed a year of no mortality. The two-yearly cycle is still apparent, but in a much less marked degree, and on striking an average for each two-yearly cycle it is evident that the zymotic death rate from measles has diminished.

Measles has been prevalent in the Borough throughout the year, but instead of spreading rapidly its spread has been checked and lengthened. As is the case with most of the infectious diseases School attendance is the chief source of the spread of measles. During the year I had to close one by one the Infants' Departments of the following schools on account of the prevalence of measles: — London Road, Prittlewell (C.E.), Leigh Road, Brewery Road. All the elementary schools in the Borough were closed a week earlier than usual for the Christmas holidays as the disease was gaining the upper hand.

The notifications I have arranged for from the teachers have proved very useful. This form of notification renders it unnecessary to advocate the compulsory notification of measles, which would prove an expensive measure.

A modified method of voluntary or compulsory notification might, however, prove of advantage—where the ordinary notification fee might be allowed for the *immediate* notification of the *first* case of measles occurring in every house containing children under seven years of age.

The zymotic death rate for Measles during 1905 was 0.13.

## Whooping Cough.

This disease was also prevalent during the year. It accounted for 18 deaths, 6 of these being infants under one year of age.

The zymotic death rate was 0.38 in 1905 as compared with 0.12 in 1904, 0.20 in 1903, 0.25 in 1902, and 0.84. in 1901.

This disease is carried about by thoughtless visitors in a most reprehensible manner, and generally speaking, together with Measles is treated by the populace at large as a disease of little moment. This no doubt largely arises from the fact that these diseases are not notifiable. I should, however, like to draw the attention of the public at large to the fact that the annual mortality from Measles and Whooping Cough exceeds that of all the ordinary notifiable diseases put together. Whooping Cough is an exceedingly serious disease in young children, and the fatality rate among children under two years of age is very high. Both Measles and Whooping Cough claim nearly all their victims (fatal cases) among children under five years of age. For this reason it is of the utmost importance to preserve young children from these diseases if possible, and any case occurring in a house should be instantly isolated. After five years of age the fatality of these diseases (particularly Whooping Cough) decreases very rapidly.

## Tuberculosis.

During 1905, 52 deaths were attributed to Pulmonary Tuberculosis, and 24 deaths to other tubercular diseases.

The ages at death were :—

| Ages. | Under 1 Year. | 1 5 | 5–15 | 15–25 | 25—65 | 65 over. |
|---|---|---|---|---|---|---|
| Pulmonary Tuberculosis | — | — | 1 | 5 | 44 | 2 |
| Other Tubercular Diseases ... | 7 | 8 | 2 | 2 | 5 | — |

The proportion of deaths due to Tubercular diseases was 10.09 per cent. of the total number of deaths.

The death rate from Pulmonary Tuberculosis alone during 1905 was 1.12, as compared with 1.19 in 1904, 0.88 in 1903, 1.03 in 1902, and 1.10 in 1901.

No fewer than 20 out of 32 deaths of Phthisis Pulmonalis inquired into, occurred among persons who had come into the district suffering with the disease.

Roughly, rather more than half the phthisis deaths in the Borough occur among persons who come to reside in Southend on account of their tubercular disease.

As to preventive measures which had been taken prior to death among 32 cases enquired into, in 12 instances spitting cups were used and periodically disinfected and boiled; in 6 other instances rags were used and subsequently burnt.

These figures, as compared with those for 1904, show a decided improvement in the education of the public as regards the necessity for properly disposing of tuberculous expectoration.

In my last annual report I commented on the small proportion of cases of death from Pulmonary Tuberculosis in which proper preventive measures had been used, and I advocated some form of notification of cases of Pulmonary Tuberculosis in order to permit of organised preventive measures being adopted.

After due consideration the Health Committee, in September, 1905, resolved to recommend "that consumption of the lungs attended with Tuberculous Expectoration be made a voluntarily notifiable disease"—at the usual notification fees—"provided the patient is not dying at the time of notification." This recommendation was confirmed by the Town Council. I sent out the following circular letter:—

SOUTHEND-ON-SEA.

*October 19th, 1905.*

DEAR SIR,

The Health Committee have authorised me to invite voluntary notification of cases of Pulmonary Consumption with expectoration, for which the ordinary fees for notification will be allowed, provided that the ordinary form of notification is duly filled in, and provided also that the patient is not moribund. In other words a fee will not be allowed if death occurs within a week of receipt of notification, because I should in any event learn of such cases from the Death Returns. I should also be glad to be notified of a change of residence on the part of any patient so as, if possible, to secure disinfection of the vacated premises prior to the next tenant coming in.

I propose on receipt of notification (1) to enquire into and to advise as to the preventive measures to be taken to prevent the spread of the disease, and where the patient is very poor to provide a pocket spittoon or Japanese papers. (2) To leave printed instructions as to means to be taken to prevent the spread of the disease, because when verbally given, instructions are either forgotten or misunderstood. (3) The notification will also enable me to enquire into the general sanitary condition of the premises.

You will note that notification is entirely "voluntary," but I hope that I shall receive a sufficient number of notifications to enable us to form a reliable judgment as to how this tentative measure will work.

It is hardly necessary for me to add that there will be no interference of any kind as to the treatment of the patient, nor undue interference with his business relations.

There is much to be said for the notification of Phthisis, seeing that we can hope for better success in dealing with this disease than with any other infectious disease because we have more definite knowledge as to the degree and limited source of contagion in tuberculosis. I trust I shall receive your support in this matter,

I am, Dear Sir,

Yours faithfully,

*Medical Officer of Health.*

I received 13 voluntary notifications between October 20th and December 31st, 1905. In four instances no fees were authorised as the patient was moribund at the time of notification.

As regards administrative measures in connection with notification the home is visited and its sanitary condition noted; advice is given where needed as to the benefit of fresh air and sunlight, and a precautionary printed pamphlet is left. The text of this leaflet was given in my Annual Report for 1903.

In some instances Japanese handkerchiefs are left for use.

After death infected rooms are disinfected and cleansed. During 1905, 51 rooms were disinfected after Pulmonary Tuberculosis by the Health Department. In another instance I had a whole house cleansed under Section 6 of the Infectious Diseases Prevention Act, 1890.

## Spit Notices.

The following notice was posted in various public places and sent round to the public houses to be placed in prominent positions.

BOROUGH OF SOUTHEND-ON-SEA.

---

PREVENTION IS BETTER THAN CURE.

DO NOT SPIT—

(Except into Street Gullies out of doors, or into suitable spittoons or spitting flasks).

Consumption and other infectious diseases may be spread by careless spitting.

By Order of the Health Committee.

A few months ago I brought before the Committee the risk run by those who frequent the public bars in licensed premises, but more particularly by those who live in licensed premises, and more especially the servants who sweep bar floors, by the promiscuous spitting of consumptives visiting public bars.

The Registrar General has shown that—

- (*a*) More than one-fourth of the deaths of inn keepers and their servants in London result from Consumption.
- (*b*) More than one-third of the deaths of public house servants, barmen and potmen, in London, are due to consumption.
- (*c*) The mortality from Consumption amongst London inn keepers and their servants is more than twice as great as the mortality from this disease of all occupied males, and the mortality amongst the servants alone is more than three times as great.

To diminish the danger it is requisite to—

- (1) Discourage spitting on the floors by the provision of spittoons and exhibition of spit notices.
- (2) Daily have wet disinfectants applied to floors, walls, seats, and, in the bar—
- (3) Provide spittoons, which should be cleansed with disinfectants or with boiling water.

I advised that the Health Committee should offer to provide spit notices to the public houses, and I was authorised to do so.

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A document of unusual importance and significance has recently (March 10th, 1906) been issued by the Local Government Board for Scotland, in the form of a Circular on the Administrative Control of Pulmonary Phthisis.

It starts with the assumption that pulmonary phthisis is an infectious disease within the meaning of the Public Health (Scotland) Act, 1897, and points out that local authorities in Scotland already possess manifold powers and have undoubted responsibilities in relation to the control of pulmonary phthisis. These powers include all the provisions of the Act dealing with disinfection of infected rooms and articles. The Board emphatically insists that such disinfection should be carried out by skilled officers.

There are provisions in the Act for dealing with indiscriminate expectoration; exposure of infected persons in public places without proper precaution; engaging in any occupation connected with food; or otherwise engaging in any trade or business in such a manner as to be likely to spread the disease; removal to hospital provided for the purpose, &c. The declaration of so definite a policy in Scotland leads one to hope for as definite guidance in England in the immediate future.

# Cancer.

From the enquiries I have made during the past three years into deaths from Cancer occurring in Southend, I am of opinion that in this district such external factors as habitat, food and general conditions of life play little if any part in the causation of this disease. The only two constant factors observable in cancer deaths enquired into are the association of this disease with old age; and in those of local origin, of a family history of cancer. The information as a rule obtainable in connection with imported cases is too scanty to be of any service.

It was formerly thought that Cancer was a disease limited to civilised human races, but investigations during the last year or two make it clear that the disease occurs not only among savages, but also among aged animals of various species.

Dr. E. F. Bashford,* Director of the Laboratory, Imperial Cancer Research Fund, tells us that to the newly ascertained wide occurrence of the disease are also added (1) the knowledge of the still more astonishing limitations to its transmission, and (2) the discovery that cancer possesses powers of continued growth after the death of the original host, unparalleled either by organisms or tissues in the vertebrate kingdom.

It has been abundantly proved by experiment that cancer cells transmitted from one mouse to another continue to grow in a succession of animals. In the experiments of Dr. Bashford and his collaborators growth has proceeded in some 3,000 mice successively, all of which are now dead, yet the tumour cells derived from the first mouse are themselves multiplying in other mice as actively as ever, and producing enormous masses of tissue.

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* *Lancet*, December 9th, 1905, p. 1509.

These experimental facts throw much light on the transmission of Cancer in families, and is in my opinion a strong link in the chain of evidence that Cancer is a parasitic disease. Fortunately, however, Cancer is *not easily conveyed* from one person to another. Therefore, in popular phraseology, it is not a "catching" complaint, but (like Tuberculosis, though in even a less degree) I am inclined to be of opinion that through *protracted* exposure to infection by the parasite of Cancer, the disease is in rare instances communicable, and I believe that sufficient evidence in this direction will eventually be adduced.

As the result then of recent additions to our knowledge of Cancer I am of opinion that it is a disease which calls for public health measures—not indeed of a stringent nature, but dealing more with the necessity for destroying the dressings of cancerous ulcers; and for issuing warnings that persons who have frequently to dress such cancerous ulcers should be careful to protect any cut or wound of the hands, and to secure the boiling of sheets and pillow cases used by persons suffering from Cancer.

I have mentioned that the Cancer parasite probably does not easily lead a saprophytic existence, nor is it easily transmitted, but the possibility of these should be borne in mind, and as the lower forms of life grow best in damp undrained houses—shut in from fresh air and sunlight through faulty construction or trees—Cancer patients and their attendants should avoid such houses. If more than one case of Cancer occurs in a given house it would be advisable to thoroughly cleanse and disinfect such house, but if the precautions mentioned above are observed, it should be a rare occurrence to have a second case of Cancer in the same house.

Enquiries were made in the Borough into 41 deaths from Cancer. An analysis of these showed that the alimentary tract was involved in 21 cases, the liver in 9 cases, the reproductive organs in 8 cases (6 of these females), the larynx was involved in one case, the 2 remaining cases being one of Sarcoma and one of Lymphadenoma.

Nine out of the first 23 deaths enquired into were imported cases.

The incidence per 1,000 resident population was 0.88, including the imported cases.

This compares with previous years as follows:—

| 1904 | 1903 | 1902 | 1901 | 1900 | 1899 |
|---|---|---|---|---|---|
| 0.71 | 0.72 | 0.95 | 0.73 | 0.61 | 0.70 |

The deaths were distributed in the parishes as follows:—

| | |
|---|---|
| St. John's | 16 |
| St. Mary's | 4 |
| St. Alban's | 8 |
| All Saints | 12 |
| Southchurch | 1 |
| | 41 |

The age and sex incidence was as follows:—

| Ages | 1—5 | 5—15 | 15—25 | 25—65 | 65 and upwards. |
|---|---|---|---|---|---|
| Male | — | — | — | 5 | 14 |
| Female | — | — | 1 | 15 | 6 |

# Factory and Workshops Act, 1901.

The following is a tabular statement of the work carried out by my department during 1905.

This table is prepared by the Home Office for uniformity of statistical returns.

It will be noted that 607 inspections were made under the Act, resulting in 8 written notices, the detection of 14 defects, which were all remedied without having to resort to prosecution.

## 1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

| Premises. | Number of | |
|---|---|---|
| | Inspections. | Written Notices. |
| Factories (including Factory Laundries) ... ... ... | 46 | 1 |
| Workshops (including Workshop Laundries) ... ... | 348 | 6 |
| Workplaces ... ... ... ... ... ... ... | 211 | 1 |
| Homeworkers' Premises ... ... ... ... ... | 2 | — |
| Total ... ... ... ... ... | 607 | 8 |

## 2.—DEFECTS FOUND.

| Particulars. | Number of Defects | |
|---|---|---|
| | Found. | Remedied. |
| *Nuisances under the Public Health Act:—* | | |
| Want of cleanliness ... ... ... ... ... | 7 | 7 |
| Want of ventilation ... ... ... ... ... | 1 | 1 |
| Overcrowding ... ... ... .. ... ... | 1 | 1 |
| Want of drainage of floors ... ... ... ... | — | — |
| Other nuisances ... ... ... ... ... ... | 2 | 2 |
| Sanitary accommodation { insufficient ... ... | 2 | 2 |
| Sanitary accommodation { unsuitable or defective ... | 1 | 1 |
| Total ... ... ... ... ... | 14 | 14 |

## 3.—OTHER MATTERS.

| Class. | No. |
|---|---|
| Matters notified to H.M. Inspectors of Factories:— | |
| Failure to affix Abstract of the Factory and Workshop Act (s. 133) ... | 1 |
| Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (s. 5)— | |
| Notified by H.M. Inspectors ... .. ... .. ... ... | 4 |
| Reports (of action taken) sent to H.M. Inspectors ... ... ... | 1 |
| (Work required was carried out in 3 cases.) | |
| Underground Bakehouses (s. 101):— | |
| In use at the end of the year ... ... ... ... ... ... ... | 3 |
| Homework:— | |
| *Lists of Outworkers* (s. 107)— | |
| Lists received (Outworkers 2) ... ... ... ... ... ... | 2 |
| Addresses of Outworkers—forwarded to other Authorities ... ... | Nil |
| received from other Authorities ... ... | 1 |
| *Homework in Unwholesome or Infected Premises—* | |
| Cases of infectious disease notified in homeworkers' premises ... ... | 1 |
| Orders prohibiting homework in infected premises (s. 110) ... ... | 1 |

Workshops on the Register (s. 131) at the end of the year :—

| | |
|---|---|
| Workshop Bakehouses | 33 |
| Factory Bakehouses | 3 |
| Workshop Laundries | 11 |
| Factory Laundries | 7 |
| Other Workshops | 63 |
| Domestic Workshops | 5 |
| Total number of Workshops on Register | 117 |

The following is a copy of the Home Work Order of the 15th August, 1905 (the Home Work Orders of 11th December, 1901, and of the 14th July, 1902, being revoked).

*Official Copy.*

STATUTORY RULES AND ORDERS, 1905.

No. 939.

## FACTORY AND WORKSHOP.

### Home Work.

### THE HOME WORK ORDER OF 15TH AUGUST, 1905.

In pursuance of the powers conferred on me by Section 107, 108, and 110 of the Factory and Workshop Act, 1901, I hereby make the following Order :—

I. Section 107 (relating to lists of out-workers) and Section 108 (relating to employment in unwholesome premises) shall apply to the following classes of work : —

The making, cleaning, washing, altering, ornamenting, finishing, and repairing of wearing apparel and any work incidental thereto;

The making, ornamenting, mending, and finishing of lace and of lace curtains and nets;

Cabinet and furniture making and upholstery work;

The making of electro-plate;

The making of files;

Fur-pulling;

The making of iron and steel cables and chains;

The making of iron and steel anchors and grapnels;

The making of cart gear, including swivels, rings, loops, gear buckles, mullin bits, hooks, and attachments of all kinds;

The making of locks, latches, and keys;

The making of covers for, and the covering, finishing, altering or repairing of, umbrellas, sunshades, parasols, and articles of a similar character, and any work incidental thereto;

The making of paper bags and of paper boxes;

Brushmaking; and

The making of stuffed toys.

II. Section 110 (relating to the prohibition of home work in places where there is infectious disease) shall apply to the following classes of work:—

The making, cleaning, washing, altering, ornamenting, finishing, and repairing of wearing apparel and any work incidental thereto (as in the said section specified);

The making, ornamenting, mending, and finishing of lace and of lace curtains and nets;

Upholstery work;

Fur-pulling;

The making of covers for, and the covering, finishing, altering or repairing of, umbrellas, sunshades, parasols, and articles of a similar character, and any work incidental thereto;

The making of paper bags and of paper boxes;

Brushmaking; and

The making of stuffed toys.

2. The list of out-workers required to be kept by Section 107 and the copies thereof shall be kept and made in the form and manner and with the particulars shown in the Schedule hereto.

3. This Order may be referred to as the Home Work Order of the 15th August, 1905.

4. The Home Work Orders of the 11th December, 1901, and of the 14th July, 1902, are hereby revoked.

*A. Akers-Douglas,*

One of His Majesty's Principal
Secretaries of State.

Home Office, Whitehall.
15th August, 1905.

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*Schedule.*

LIST OF OUT-WORKERS.

A correct list of out-workers employed in the following classes of work:—

(*a*) the making, cleaning, washing, altering, ornamenting, finishing, and repairing of wearing apparel and any work incidental thereto;

(*b*) the making, ornamenting, mending, and finishing of lace and of lace curtains and nets;

(*c*) cabinet and furniture making and upholstery work;

(*d*) the making of electro-plate;

(*e*) the making of files;

(*f*) fur-pulling;

(*g*) the making of iron and steel cables and chains;

(*h*) the making of iron and steel anchors and grapnels;

(*i*) the making of cart gear, including swivels, rings, loops, gear buckles, mullin bits, hooks, and attachments of all kinds;

(*j*) the making of locks, latches, and keys;

(*k*) the making of covers for, and the covering, finishing, altering, or repairing of, umbrellas, sunshades, parasols, and articles of a similar character, and any work incidental thereto;

(*l*) the making of paper bags and of paper boxes;

(*m*) brushmaking; and

(*n*) the making of stuffed toys;

must be kept in the form and with the particulars specified below in the factory or workshop or place from which the work is given out, and must be open to inspection by H.M. Inspectors and the officers of the local authority; and a copy of the list signed and dated and corrected up to that date must be forwarded to the local authority of the district on or before the first day of February and the first day of August in each year.

In order that the list may be correct, the name of any person newly taken into employment should be immediately entered, and the name of any person ceasing to be employed should be immediately struck out.

| | |
|---|---|
| Factory, Workshop, or Place from which the work is given out | Full Postal Address ........................<br>Business ........................................<br>Name of Occupier............................ |

List of Persons directly employed by*

† in the business of, but outside, the above Factory, Workshop, or Place, in the classes of work specified above.

---

* Give name of Employer.

† Say whether the Occupier or a Contractor employed by the Occupier.

| Name in full. (1) | Whether employed as Workman (W) or Contractor (C). (2) | Place of Employment, i e. place where the work is actually done. (3) | Address. [No entry need be made in this column if the entry in column (3) is a sufficient address.] (4) |
|---|---|---|---|
| | | | |

## Sanitary Condition of Workshops, &c.

In accordance with Sections 2, 3, and 7 of the Factory and Workshop Act, conditions were dealt with under Section 91 of the Public Health Act, 1875, resulting in the remedying of seven instances of want of cleanliness, one of overcrowding, one of want of sufficient ventilation, and two of other nuisances.

As to sanitary accommodation, though the Public Health Acts Amendment Act, 1890, has been for some time adopted by the Council, hitherto no regulations had been made under Section 22 as to a standard of sufficiency and suitability of sanitary accommodation. I accordingly brought this matter before the Health Committee, with the result that the following regulations were made and passed by the Town Council in June, 1905 :—

## BOROUGH OF SOUTHEND-ON-SEA.

## REGULATIONS

MADE BY THE MAYOR, ALDERMEN AND BURGESSES OF THE BOROUGH OF SOUTHEND-ON-SEA RELATING TO THE SUFFICIENCY AND SUITABILITY OF SANITARY ACCOMMODATION AT FACTORIES AND WORKSHOPS WITHIN THE BOROUGH.

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1. In factories or workshops where females are employed or in attendance there shall be one sanitary convenience for every 25 females.

In factories or workshops where males are employed or in attendance there shall be one sanitary convenience for every 25 males; provided that —

(*a*) in factories or workshops where the number of males employed or in attendance exceeds 100, and sufficient urinal accommodation is also provided, it shall be sufficient if there is one sanitary convenience for every 25 males up to the first 100, and one for every 40 after;

(*b*) in factories or workshops where the number of males employed or in attendance exceeds 500, and the District Inspector of Factories certifies in writing that by means of a check system, or otherwise, proper supervision and control in regard to the use of the conveniences are exercised by officers specially appointed for that purpose it shall be sufficient if one sanitary convenience is provided for every 60 males, in addition to sufficient urinal accommodation. Any certificate given by an Inspector shall be kept attached to the general register, and shall be liable at any time to be revoked by notice in writing from the Inspector.

In calculating the number of conveniences required by this order, any odd number of persons less than 25, 40, or 60, as the case may be, shall be reckoned as 25, 40, or 60.

2. Every sanitary convenience shall be kept in a cleanly state, shall be sufficiently ventilated and lighted, and shall not communicate with any work-room except through the open air

or through an intervening ventilated space; provided that in work-rooms in use prior to 1st January, 1903, and mechanically ventilated in such manner that air cannot be drawn into the work-room through the sanitary convenience, an intervening ventilated space shall not be required.

3. Every sanitary convenience shall be under cover and so partitioned off as to secure privacy, and if for the use of females shall have a proper door and fastenings.

4. The sanitary conveniences in a factory or workshop shall be so arranged and maintained as to be conveniently accessible to all persons employed therein at all times during their employment.

5. Where persons of both sexes are employed, the conveniences for each sex shall be so placed or so screened that the interior shall not be visible, even when the door of any convenience is open, from any place where persons of the other sex have to work or pass; and, if the conveniences for one sex adjoin those for the other sex, the approaches shall be separate.

## Bakehouses.

There were 36 on the register at the end of 1905. Four new bakehouses were added to the register during the year. The old bakehouse in Southchurch Road, which I referred to in my Annual Report for 1904, was pulled down and a new bakehouse erected.

The use of a kitchen and scullery as a bakehouse, to which I also alluded in my last Annual Report, ceased, and a new bakehouse was erected.

There were 320 inspections made of the bakehouses in the Borough, and three notices served. Two untrapped sink-wastes were required to be trapped, and increased air space was obtained in two bakehouses and improved lighting in a third.

## Home Work.

Two lists, each of one outworker, were received, one case of infectious disease occurred in the premises of a home worker in wearing apparel, the employment premises being in London. An Order was duly issued under Section 110, prohibiting homework in the infected premises.

## Sewerage and Drainage.

During the year 10,596 feet of soil sewers, and 12,036 feet of storm water drains were laid by the Corporation, and 15,120 feet by private owners. Among the work carried out by the Council were the sewering of Shakespeare Drive North, extending from Fairfax Drive in a southerly direction for a distance of about 750 feet. This, in conjunction with the Fairfax Drive sewer, has greatly relieved a district which was formerly riddled with cesspools.

An important addition was made to the Leigh Road service by extending it, at a cost of £250, from Chalkwell Avenue to a point about 300 yards east of Chalkwell Hall Cottages at Carlton Drive. The sewer in North Street and Eastwood Road was re-laid at an approximate cost of £500. In Hamstell's Lane, Southchurch, a sewer was laid at an approximate cost of £600. The above sums were sanctioned after enquiry by the Local Government Board.

### Surface Water Drainage.

During 1905 application was made by the Council, and the sanction of the Local Government Board obtained to the borrowing of the sum of £20,600 for the provision of a system of surface water drainage dealing with the area of the Borough lying to the west of High Street. The work is being carried out in sections. Sections have already been completed.

This system will relieve the original main sewers to a very considerable extent. The first street washings will, as heretofore, go into the original sewer, but in case of heavy rainfall the excessive surface water flow will jump a weir into the new system of drains.

## Leigh Cliff Estate Drainage.

In March, 1905, I submitted to the Health Committee a report I had compiled in accordance with the request of the Local Government Board with respect to the present system of drainage of this estate. Copies of this report were forwarded as required to the Local Government Board and to the County Council.

The following is substantially the text of the Special Report—

SOUTHEND-ON-SEA.

*March 20th, 1905.*

### REPORT BY THE MEDICAL OFFICER OF HEALTH ON THE DRAINAGE OF THE

### LEIGH CLIFFS ESTATE.

In accordance with the request of the Local Government Board, dated 13th February, 1905, that the Town Council instruct their Medical Officer of Health to prepare a report as to the means of sewage disposal in vogue in each house in the Leigh Cliffs locality which is not served by a public sewer, and how far there are available at a reasonable cost to each occupier the means of disposal of his sewage, I have the honour to present the following report.

Having made systematic inspections of the locality in question, and having conferred with the Borough Engineer and Surveyor, I beg to state that the Leigh Cliffs Estate is situated at the extreme west of the Borough of Southend-on-Sea, being bounded on the west by the Urban District of Leigh, on the east it is bounded by the Sea View Estate, on the north by the Leigh Road, and on the south by cliffs, between which and the sea runs the London, Tilbury and Southend Railway.

The estate falls rapidly from north to south, with also a gentler decline from east to west, the Leigh Road being about 120 feet above ordnance datum, and the Cliffs about 50 feet above ordnance datum. The subsoil is London clay.

The following roads have been laid out on this estate in addition to the main Leigh Road, viz., Nelson Drive, Carlton Drive, Somerville Gardens, Highcliff Drive, Leigh Cliff Road, Hillside Road and Victor Drive. Part of the last named road, which runs east and west, is in the Urban District of Leigh-on-Sea.

[An appended table in the Special Report showed the number of houses in each road in this estate and the present means of drainage. (Here only a summary of the tabular statement is given).]

There is no Corporation sewer at the present time which can possibly be used for the drainage of this estate. The sewer which has lately been extended along the Leigh Road as far as Carlton Drive, has been so extended to the utmost limits of physical possibility. It falls from west to east, and the final houses which drain into it opposite Carlton Drive have only just sufficient fall. Beyond Carlton Drive westwards the natural fall of the ground is in an opposite direction, the summit being situated at Carlton Drive. This Leigh Road sewer, which comes as it were to the very gates of the Leigh Cliffs Estate, cannot therefore be utilised for the drainage of any but a few houses at the northern extremity of Carlton Drive.

Again, the Western Valley Sewer, which has lately been extended as far as Cliff Gardens is at present only available for the drainage of the Sea View Estate for similar reasons.

The only practicable method of sewering the estate to connect it with the Corporation's main Western Valley Scheme will be to construct a new sewer.

The present development of the estate does not perhaps make an expensive main drainage scheme imperative, but as the estate is fast developing, and nuisances from overflowing cesspools are constantly recurring; and further as the situation of the estate is picturesque and attractive, it is a question whether in the long run the Corporation will not find it the most convenient and at the same time the most economical plan to undertake the main drainage of this estate in the immediate future. The main drainage of the western portion of the Borough south of the Leigh Road will then be complete. As a matter of fact the matter is under consideration by the Highways Committee, as shewn by the following memorandum kindly supplied by the Borough Engineer and Surveyor.

> " Owing to the physical formation of the ground it is only possible to drain this estate by laying an intercepting sewer close to the north side of the railway, which would join the present system at a point near the footpath situate on the south of Cliff Avenue. This sewer would extend to a point close to the western boundary of the Borough, and would be capable of receiving drainage from all roads west of Hillside Road.
>
> " This matter has been under consideration by Committee for some time with a view to an arrangement being made with the owners to lay this sewer."

The following paragraphs are taken from my Annual Report for 1904.

> " SEA VIEW ESTATE.—After protracted negotiations and some correspondence with the Local Government Board the extension of the Western Valley Sewer was commenced in February, and was carried in the course of the year as far as Butts' Cesspool.
>
> " The houses in Beach Road, which formerly drained into this Cesspool (a constant source of nuisance) were connected up with the new sewer before the end of the year. The estate owners have not, however, connected up generally. The Corporation are now taking steps to sewer the roads under the Private Street Works Act. Other building estates on the western boundary of the Borough are fast developing, and further sewerage schemes will be required in the immediate future. The Highways and Works Committee are at the present time considering plans for the construction of a sewer in the locality of Cliff Gardens."

"LEIGH ROAD SEWER EXTENSION.—This sewer has been extended in a westerly direction as far as physical configuration of the ground will permit, the contract price being £730. This sewer now extends to Carlton Drive.

"A new sewer with other connections will be required for the remainder of the Leigh Road west of the point. This will have to be considered shortly in connection with the sewerage of the rapidly opening up of Leigh Cliffs Estate."

The map submitted by the Local Government Board being out of date, and showing buildings which have been since demolished, and not shewing new roads which have been made on the Leigh Cliffs Estate, I have asked the Borough Surveyor to kindly prepare me a new and enlarged map of the Leigh Cliffs Estate on which I could show the positions of houses and cesspools, &c., referred to in this report.

[This map was submitted with the Special Report, but is not here reproduced. I have, however, by the courtesy of Mr. James Thompson, been able to reproduce the latest map of the Borough.]

I beg to acknowledge the kind courtesy of the Borough Surveyor and the Deputy Borough Surveyor in assisting me in this matter, and I have also to thank them for the new map showing the position of existing sewers, and of the proposed sewers in this neighbourhood.

J. T. C. NASH. M.D., D.P.H.,

*Medical Officer of Health.*

### SUMMARY.

| Houses. | | | | |
|---|---|---|---|---|
| Occupied | 37 | 44 | Cesspools | 29 |
| Unoccupied | 7 | | Privies | 11 |
| In course of erection | 7 | | Pail Closets | 7 |

In June, 1905, the owners and occupiers of property on this estate submitted a memorial to the Town Council, requesting an extension of the main sewer to the Estate.

In August the Town Clerk submitted a letter from the Local Government Board in connection with the proposed drainage of the Leigh Cliffs Estate, and the Borough Surveyor reported as to the negotiations with the owners of land through which the proposed sewer is intended to be laid.

Plans have now (March, 1906) been submitted and approved for the construction of this sewer.

## Refuse Destructor.

In January, 1905, the Town Council confirmed its resolution, mentioned in my last Annual Report, and application was made to the Local Government Board for sanction to the borrowing of £10,000, being the estimated cost of the provision of a Refuse Destructor, to be erected upon land belonging to the Corporation at the Depôt, London Road. On April 4th an inquiry was duly held by Mr. M. K. North, one of the Inspectors of the Local Government Board, at which considerable opposition was raised by the Southend-on-Sea Estates Co., Ltd., and property owners in the vicinity of the proposed site. In June a letter was received from the Local Government Board to the effect that the Board thought it desirable to defer giving their decision upon the application pending the result of the threatened action by the Southend-on-Sea Estates Co., Ltd, and others against the Corporation.

On the 20th June, the Town Council resolved, having regard to the urgency of the matter and the desirability of at once proceeding with the erection of the Refuse Destructor in the interests of the health of the Borough, to appoint a deputation to attend before the Local Government Board with a view of expediting the matter. To this in July the Local Government Board replied that it would be contrary to the practice of the Board to receive a deputation from one side to discuss a matter which has formed the subject of a local inquiry, and they could make no exception in this instance.

This unfortunate deadlock, as regards the proposed site, indicates the urgency of securing another site, for the necessity of the provision of a Refuse Destructor is obvious and recognised by the Burgesses at large.

## House Accommodation.

I commented fully on this in my last Annual Report. All plans submitted are dealt with by the Buildings Committee, and have to comply with the byelaws in force. Unfortunately the jerry builder is not unknown in this district, who, while keeping within the byelaws, uses inferior material in the way of bricks, mortar and fittings. With only two building inspectors in a town growing so rapidly, it is to be feared that some of the requisitions of the byelaws are occasionally transgressed. Thus I had recently a complaint of dampness of a house about nine years old, in which on examination it was found that in places the site had not been properly concreted over.

Generally speaking, the house accommodation is adequate and fit for habitation. I may, however, be obliged shortly to condemn some very old houses in the older villages on the outskirts of the Borough, as they are becoming dilapidated. I am somewhat loth to act too soon in this matter, as these houses are let at cheap rents, and I have no evidence that the health of the present inmates is in any way affected.

## Housing of the Working Classes Acts, 1903.

The 1903 Act provides that where houses are in such a state as not to be reasonably capable of being rendered fit for human habitation a Court of Summary Jurisdiction may order the closing of such property without the service of notice from the Council.

## Housing of the Working Classes Act, 1890.

The dwellings erected in Ruskin Avenue under Part III. of this Act are under the control of the Health Committee, who have appointed a Sub-Committee in this connection. The question of the water supply was raised during the year owing to the Water Works Company having cut off the supply of one house in consequence of non-payment of the water rate.

The Town Council resolved to re-arrange the rents of the houses so that the proportionate sum payable in respect of each house should include the Poor Rate, Water Rate, and General District Rate. These houses are now rented as follows, free of these rates :—

Class A, present rental 8s. 6d. per week (former rental 6s. 9d. and rates).

Class B, present rental 7s. 5d. per week (former rental 5s. 6d. and rates).

## Inquests.

During 1905 there were 25 inquests held, the causes of death on analysis being grouped as follows :—

| | | | |
|---|---|---|---|
| 1. | Natural causes | 6 | deaths. |
| 2. | Accidental | 10 | ,, |
| 3. | Suicidal | 5 | ,, |
| 4. | Open Verdict | 4 | ,, |

## Passage Ways at Backs of Houses.

Under the provisions of the Private Street Works Act, 1892, the following Passage Ways were levelled, paved, sewered, and made good by the Council during the year 1905 :—

Passage at the rear of Balmoral Road.

Passage at the rear of Salisbury Avenue.

Passage known as Market Place.

Passage at the rear of Avenue Road.

The making up of back ways is a matter of sanitary importance.

# Offensive Trades.

## Knacker's Licence.

An application was made to erect premises at Eastwood. The Health Committee fully considered the application and plans submitted, and having heard a deputation of residents and property owners in the neighbourhood, finally decided not to recommend the Council to grant the licence.

## Slaughter House Byelaws.

The byelaws in force being rather antiquated the Town Council on my initiative decided to adopt the model byelaws of the Local Government Board. These having been prepared and submitted, and provisionally approved by the Local Government Board, and advertised in the local papers, the Council has adopted the recommendation of the Health Committee to affix to them the Common Seal.

## Common Lodging Houses.

The approved byelaws framed on the model byelaws were finally confirmed and sealed by the Local Government Board early in the year.

No action has been found necessary during the year. Scott's Lodging House in East Street has been visited at times and found to be properly conducted. It is not a regular common lodging house.

## Public Mortuary.

In February arrangements were made for a direct and constant supply of water at the Mortuary, which has proved of great convenience and advantage.

## Foods.

During the last week in December, 1904, a household in the Borough was affected with illness which there was reason to suspect was due to a tin of sardines. The sardines had all been eaten or destroyed prior to the case coming to my knowledge, and it had not been noticed whether the tin was "pricked" or "blown" before it was opened. Other tins of the same maker's were examined, and two surrendered as there was evidence of some leakage. No further ill results have been reported.

## Shellfish.

COCKLES.—The precautions adopted by the local shellfish merchants in regard to cockles have very materially reduced the illness formerly traceable to these molluscs. It is, however, urgently necessary that legislature should absolutely forbid the laying down of cockles or other shellfish in narrow creeks down which almost undiluted sewage or sewage effluent flows during the last three or four hours of the ebb tide.

MUSSELS.—I have recently drawn attention* to a method, sometimes available, of distinguishing even by physical inspection, the probabilities of this variety of shellfish having come from sewage-polluted sources.

## Meat Inspection.

This has been carried out as far as practicable by Inspector Penn, who has, however, numerous other duties to perform.

## Slaughter Houses.

There are seven private slaughter houses in the Borough. It is obvious that it is impossible for the Inspector to be present at all slaughterings, even if he devoted his whole time to this duty. I would therefore once more point out the advisability of considering the provision of a Public Abattoir. 127 visits of inspection of the seven private slaughterhouses were made during 1905, and two notices were served on occupiers. When an additional Inspector is appointed, it will be possible to arrange for more frequent inspections.

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* *British Medical Journal*, Vol. I., 1906.

# Dairies, Cowsheds, and Milkshops.

## Cowsheds.

There are four cowsheds in the Borough. 49 visits of inspection were made by the Inspector in addition to my own occasional visits. The cowsheds are greatly improved as to cleanliness, lighting and ventilation on the lines mentioned in previous reports. It was found necessary, however, on three occasions to serve notices on occupiers.

An additional cowshed was found being used contrary to regulations, but the use was discontinued on receipt of notice. The owners of the improved cowsheds are reaping the reward of expenditure in effecting the improvements mentioned in previous reports, by the better health of their cows of late.

## Dairies.

There were 35 dairies on the register on December 31st, 1905. Five new dairies were erected, and four less suitable premises discontinued. In addition, we know of 70 shops other than dairies where milk is sold. 117 visits of inspection were made at these latter, besides 353 inspections of dairies. Seven notices were served as a result.

I would recommend that the Model Regulations of 1899, drawn up by the Local Government Board under Section 13 of the Dairies, Cowsheds and Milkshops Order, which were adopted by the Town Council in 1900, be again advertised at length in the local papers during the current year.

These are exceedingly valuable regulations, and are enforced in the Borough, but sometimes ignorance of the provisions is pleaded, and I therefore advise calling universal attention to them again.

## Sale of Food and Drugs Acts.

The administration of these Acts in the Borough is at present in the hands of the County Council, who have appointed Inspector Card as their officer for this district.

At the request of the Health Committee the County Council directed Inspector Card to supply me with quarterly returns of the samples taken and analysed, prosecutions and results.

The following samples were taken by Inspector Card during the year in the Borough.

BOROUGH OF SOUTHEND-ON-SEA.

| Nature of Samples. | Samples Taken. | Samples Analysed. | Samples Adulterated. | Percentage of Adulteration. | Nature of Adulteration. | Prosecutions and Results. |
|---|---|---|---|---|---|---|
| Tea ... ... | 1 | 1 | — | — | — | — |
| Sugar ... ... | 1 | 1 | — | — | — | — |
| Chocolate ... | 1 | 1 | — | — | — | — |
| Milk ... ... | 34 | 34 | 6 | 17·6 | 4 Samples Milk Fat Deficient | 1 Withdrawn<br>3 Dismissed |
| Butter ... ... | 39 | 34 | 6 | 1·76 | 2 Samples 100 % Margarine<br>3 Samples Boric Acid 0·9 %<br>1 Suspicious | 1 Fined £1 and 10/- costs<br>2 Fined 10/- and 10/- costs<br>3 Withdrawn on payment of costs<br>No action |
| Camphorated Oil | 3 | 3 | 1 | 33 | Deficient in Camphor | Fined 10/-, including costs |
| Other Drugs ... | 6 | 6 | — | — | — | — |
| Totals ... | 85 | 80 | 13 | 16·25 | Substitution 2<br>Addition 6<br>Subtraction 5 | 11 Prosecutions:<br>4 Penalties<br>2 Withdrawn<br>5 Dismissed |

A prosecution early in 1905 on a deficiency of 36 % in Milk Fat in a sample taken at the end of 1904 resulted in a penalty of £1 fine with 4/- costs.

The following notes are taken from a report by Dr. Armstrong to the Sanitary Committee of Newcastle-on-Tyne on the Circular of the Board of Agriculture, dated March 27th, 1905. I duly laid this report before the Health Committee, and received instructions to incorporate an epitome of it in my Annual Report.

Dr. Armstrong comments adversely on the recommendation of the Board of Agriculture that—

> "In the absence of any special circumstances indicating the commission of fraud, the local authority might in the first instance call the attention of the vendor to the adverse report of the analyst, and afford him the opportunity of submitting any explanation."

Dr. Armstrong points out that the circumstances bearing on the quality of a given milk supply are so complex and the opportunities of plausible excuse so varied, as to make it impracticable for a local authority to determine the truth or falsity of any explanation offered.

The difficulty is emphasized of carrying out a further recommendation of the Board of Agriculture as to taking of *successive* samples. Such a procedure would lead the Bench to be disinclined to convict except on evidence of repeated adulteration.

The fraudulent dealer would adulterate with impunity until a first sample is taken. This being his warning, he would cease to adulterate so that succeeding samples would afford no ground for conviction.

The Board's recommendation would go a long way towards nullifying the protection to the public which is the primary object of the Food and Drugs Acts.

> "The recommendation is an innovation. All producers of goods other than milk have to protect their own interests. The Board proposes to protect those of the milk producer only."

> "The surest way to cause dairy farmers and cowkeepers to test their produce is to prosecute in every case where milk is found to be below standard."

The limits fixed by the Sale of Milk Regulations, 1901, are very low. I quoted them in my Annual Report for 1901, and expressed the hope that they would not lead to a lowering of the standard of genuine good milk.

> "This low milk standard benefits (at the expense of their customers) a few producers only, the inferior class of whose stock, or whose method of conducting business disentitles them to such special consideration, on the other hand it hurts the main body of milk producers.
>
> "It is for sanitary authorities to protect the helpless consumer of milk rather than the resourceful producer."

I fully endorse Dr. Armstrong's final contention (as amplified by Mr. M. Wynter Blyth) that what is wanted and what would be welcomed by all honest milk producers and vendors is a hard and fast standard from which there should be no departure, and no excuse for failure to maintain. Such a standard, in Mr. M. Wynter Blyth's opinion should be higher for the winter months than the standard (so-called) at present in force; for those summer months when milk is naturally a little lower in fat the standard might be kept as at present at 3 per cent.

If every person found selling milk below the fixed standard were prosecuted, leaving him (in case of his being a middleman or retailer) to seek his own remedy against the producer, then the interests of the public would be more thoroughly protected, the legal difficulties reduced, and justice more readily secured.

It should invariably be borne in mind by a Bench that the standard of 3 per cent. of fat is a *minimum*, and that most mixed milks show a much higher percentage of fat. The average fat percentage of milk supplied by a well-known London firm is rather over four per cent.

The following obligations by my advice have to be signed by the Contractors for the supply of milk to the Borough Sanatorium. The quality of the milk during 1905 was excellent.

# MILK SUPPLY FOR SANATORIUM.

## Contractor's Obligations.

The Contractor shall supply milk which must contain not less than 3.25 per cent. of butter fat, and 8.75 per cent. solids not fat.

The milk must be free from preservatives or colouring matter, and be drawn from healthy cows only.

The milk to be supplied in sealed cans to the Sanatorium before 10 every morning. A warranty ticket must be attached to every can guaranteeing its contents to be in accordance with the specification.

All pails, strainers, railway churns, refrigerators, fittings, and other utensils, vessels and implements brought into contact with the milk shall be thoroughly inspected before being used, be properly cleansed, scalded and dried immediately after being used, and exposed to the air in a clean place, without lids or covers.

The farms, water supply, drainage system, farm buildings, dairy and cattle, shall be open at any reasonable time to the inspection of the Council's Medical Officer of Health, or any person duly authorised by him, and no milk shall be supplied from any farm which has been certified by the said Medical Officer of Health to be in an insanitary condition.

The cows shall be subject, if required, to a periodical veterinary inspection by a veterinary surgeon duly appointed by the Council, and the contractor shall undertake not to supply milk or cream from any cow which is diseased, newly calved, or under physic.

The udders of the cows shall be carefully cleansed before milking, and the greatest cleanliness observed at every point connected with the cows, cowhouse, utensils and attendants.

The milk shall be carefully strained and cooled to at least 56° F., immediately after milking, over a Lawrence or other cooler of approved design, and shall be delivered at the Sanatorium at a temperature not above 60° F.

The contractor shall undertake that the refrigerators and the inflow and outflow pipes, &c., are examined daily in order to see that everything is in thorough repair, and that there is no leakage.

No milk shall be supplied from any farm on which there is a case of infectious disease.

# Sanitary Inspection, 1905.

The routine work has been carried out by the Inspectors and Drain Testers under the supervision of the Medical Officer of Health and of the Chief Inspector, Mr. W. Whur.

In the course of the year Mr. E. W. Penn, who already held the ordinary certificate of the Sanitary Institute, passed the Meat Inspector's examination, thus fully qualifying himself for those special duties which are among those assigned to him, viz., the systematic inspection of slaughter-houses, bakehouses, milk shops, butcher's shops, cowsheds, &c. Mr. Penn has proved himself a zealous and efficient official, with considerable tact in the discharge of his duties. It was therefore a matter for some surprise that a complaint was lodged against him in September by a greengrocer on the score of having exceeded his duties, and of rude behaviour.

I fully investigated the complaint and reported to the Health Committee, who agreed with me that the complaint was groundless, and that the Inspector had but done his duty.

Some special inspections of my own are referred to under sewerage and drainage, and under Typhoid Fever, dealing particularly with the Leigh Cliffs Estate and the village of Bourne's Green.

In the course of a systematic inspection in All Saints Parish in January I came across an unventilated and undrained outbuilding being used as a stable for a pony in a miserable condition. A notice was served on the owner to abate the nuisance, and the attention of the R.S.P.C.A. drawn to the matter.

In February, in the course of systematic inspection in St. Mary's Parish, I called the attention of the Inspector to overflowing cesspools in Eastwood Lane and a filthy ditch behind Alexandra College. The nuisances were abated.

In March, in the course of a systematic inspection in St. Alban's Parish, I drew the attention of the Inspector to certain dirty back yards and ill-kept and foul-smelling poultry runs. In consequence notices of abatement of nuisance were served and complied with.

Altogether I made 40 systematic inspections with one or other of the Inspectors.

A large amount of drainage work was carried out especially in connection with the Sea View Estate. It will be noted that no fewer than 4,507 visits of inspection were made during the relaying, testing and re-testing of drains. The total length of drains relaid and tested with water was 8,186 feet, in connection with 135 houses redrained. 103 additional houses had their drains tested.

In March, in accordance with Section 6 of the Infectious Diseases Prevention Act, 1890, I certified that the cleansing and disinfecting of 22, Ann's Road would tend to prevent or check infectious disease—to wit, Tuberculosis. As a result this house was cleansed and disinfected. Seven rooms in other houses were cleansed, and overcrowding was abated in one instance.

I am indebted to Mr. Whur, the Chief Inspector, for the following tabular statement of the work carried out by the Inspectors during 1905, to which is appended the work carried out by the Surveyor's Department kindly supplied by Mr. E. J. Elford, Borough Engineer and Surveyor.

## ANNUAL SUMMARY, 1905.

| | |
|---|---|
| Complaints received and attended to ... ... ... | 227 |
| Frivolous complaints received... ... ... ... | 7 |
| Nuisances detected without complaint ... ... ... | 328 |
| Nuisances abated on notice ... ... ... ... | 450 |
| Nuisances abated without notice ... ... ... | 178 |
| Number of notices served ... ... ... ... | 473 |
| Notices not carried out but being dealt with ... ... | 23 |
| Houses affected by notices ... ... ... ... | 630 |
| Houses inspected ... ... ... ... ... | 1513 |
| Premises closed as unfit for human habitation ... ... | 1 |
| Houses cleansed ... ... ... ... ... | 1 |
| Rooms cleansed ... ... ... ... ... | 7 |
| Rooms measured as to overcrowding ... ... ... | 2 |
| Overcrowding in rooms abated ... ... ... | 1 |
| Sanitary Certificates granted ... ... ... ... | 24 |

### As to Testing House Drains.

| | |
|---|---|
| Number of houses, drains tested ... ... ... | 103 |
| Number of houses re-drained ... ... ... ... | 135 |
| Total length of drain relaid and tested with water ... feet | 8186 |
| Inspections during testing and re-testing of drains, &c. ... | 4507 |
| Soil pipes tested and re-tested... ... ... ... | 234 |
| New intercepting traps fixed ... ... ... ... | 65 |
| New Inspection Chambers provided ... ... ... | 103 |
| New gullies fixed ... ... ... ... ... | 197 |
| Blocked drains cleared on notice ... ... ... | 28 |
| Blocked drains cleared by Health Department ... ... | 11 |
| Old houses drains connected to sewer ... ... ... | 64 |
| Cesspools emptied and filled in ... ... ... | 32 |
| Water laid on to w.c's. ... ... ... ... | 8 |
| New flushing cisterns provided ... ... ... | 22 |
| Defective flushing cisterns repaired ... ... ... | 18 |
| Dirty closet basins cleansed ... ... ... ... | 8 |
| New w.c.'s erected ... ... ... ... ... | 10 |
| Improved ventilation to w.c.'s ... ... ... | 2 |
| w.c's. floors paved ... ... ... ... ... | 49 |
| New closet basins and traps fixed ... ... ... | 56 |
| New stoneware sinks fixed ... ... ... ... | 2 |
| Sink waste pipes trapped ... ... ... ... | 5 |
| Bath wastes trapped ... ... ... ... ... | 1 |
| Defective sink waste pipes repaired ... ... ... | 7 |
| New sink waste pipes fixed ... ... ... ... | 1 |
| Rain water pipes disconnected from drains ... ... | 10 |
| Use of privies discontinued and filled in ... ... | 4 |
| Houses connected to Water Company's mains ... ... | 3 |
| Defective roofs repaired, houses ... ... ... | 15 |
| Defective guttering repaired, houses ... ... ... | 12 |
| Defective rain water pipes repaired ... ... ... | 9 |
| Yards paved or repaved ... ... ... ... | 65 |
| Stables paving repaired ... ... ... ... | 5 |
| Stables drained ... ... ... ... ... | 2 |
| New manure pits provided ... ... ... ... | 2 |
| Animals improperly kept removed ... ... ... | 1 |
| New sanitary ashbins provided ... ... ... | 166 |
| Inspections public house urinals ... ... ... | 90 |
| Public house urinals cleansed ... ... ... ... | 10 |
| Public house urinals, accommodation improved ... | 2 |
| Cesspools, inspections ... ... ... ... | 147 |
| Ditches cleansed ... ... ... ... ... | 1 |
| Animals buried by Health Department... ... ... | 20 |
| Schools inspected ... ... ... ... ... | 13 |
| Notices served *re* removal of manure under Section 49, Public Health Act, 1875 ... ... ... ... | 46 |
| Manure removed and charged on owners ... ... loads | 2 |
| Smoke observations ... ... ... ... ... | 79 |
| New soil pipes provided ... ... ... ... | 14 |
| Vent pipes unblocked ... ... ... ... | 6 |

| | |
|---|---|
| Defective soil pipes repaired ... ... ... ... | 20 |
| New vent shafts to drains provided ... ... ... | 13 |
| New privies erected ... ... ... ... ... | 1 |
| Dirty ceilings cleansed ... ... ... ... | 2 |
| Privies cleansed ... ... ... ... ... | 1 |
| Unventilated soil pipes ventilated ... ... ... | 2 |
| Houses not intercepted from sewer, intercepting traps fixed | 1 |
| Marine Store Dealers yards, inspections ... ... | 30 |
| Brickfields refuse heaps, inspections ... ... ... | 43 |
| Back passages made up, houses ... ... ... | 8 |
| Visits to Gipsies ... ... ... ... ... | 118 |
| Gipsy vans removed ... ... ... ... | 23 |
| Inspections with Medical Officer of Health ... ... | 40 |
| Application for knacker's yard licence refused ... ... | 1 |
| Enquiries *re* infectious diseases ... ... ... | 220 |
| Enquiries *re* infantile deaths ... ... ... ... | 122 |
| Enquiries *re* births ... ... ... ... ... | 561 |
| Enquiries *re* small pox contacts ... ... ... | 10 |
| Enquiries *re* Bubonic fever contacts ... ... ... | 2 |
| Enquiries *re* cases of pulmonary phthisis ... ... | 58 |
| Enquiries *re* cases of cancer ... ... ... ... | 29 |
| Enquiries for Medical Officer of Health ... ... | 224 |
| Interviews ... ... ... ... ... ... | 350 |
| Pamphlets delivered from house to house ... ... | 5000 |
| Fish shops inspected ... ... ... ... ... | 86 |
| Fruit shops, inspections ... ... ... ... | 72 |
| Butchers' shops inspections ... ... ... ... | 44 |
| Refreshment houses, inspections ... ... ... | 200 |

## SAMPLES TAKEN AND SUBMITTED FOR ANALYSIS.

| | |
|---|---|
| Water ... ... ... ... ... ... | 25 |
| Mud ... ... ... ... ... ... | 13 |

## FOOD SEIZED AND CONDEMNED.

| | |
|---|---|
| Tomatoes ... ... ... ... ... ... | lbs. 3 |
| Mussels ... ... ... ... ... ... | pecks ½ |
| Ham ... ... ... ... ... ... | lbs. 22 |
| Apples ... ... ... ... ... ... | bushels 21 |

## BAKEHOUSES.

| | | |
|---|---|---|
| Bakehouses on register, December 31st, 1905 ... ... | | 36 |
| New bakehouses added to register ... ... ... | | 4 |
| Bakehouses measured as to cubic space ... ... | | 2 |
| Notices served on occupiers ... ... ... ... | | 3 |
| Underground licensed bakehouses in use ... ... | | 3 |
| New bakehouses erected ... ... ... ... | | 7 |
| New factory bakehouse ... ... ... | 1 | |
| Insanitary bakehouse pulled down and new bakehouse erected ... ... ... | 1 | |

| | | |
|---|---|---|
| Bakehouse being dealt with in report for 1904 closed and new bakehouse erected | 1 | |
| New bakehouse and premises | 4 | |
| Total | — | 7 |
| Change of occupiers | | 3 |
| Bakehouse inspections | | 320 |

## IMPROVEMENTS IN ADDITION TO THE ABOVE.

| | |
|---|---|
| Improved lighting | 1 |
| Increased air space | 2 |
| Sink wastes trapped | 2 |

## DAIRIES.

| | |
|---|---|
| Dairies on register, December 31st, 1905 | 35 |
| New applications for registration | 2 |
| New application granted | 1 |
| New application in abeyance | 1 |
| Dairies discontinued as such | 4 |
| New dairies erected | 5 |
| Notices served on occupiers | 7 |
| Dairies, Inspections | 353 |
| Shops where milk is sold other than dairies | 70 |
| Visits to above shops | 117 |

## COWSHEDS.

| | |
|---|---|
| Cowsheds on register | 4 |
| Notices served on occupiers | 3 |
| Cowsheds, inspections | 49 |
| Cowsheds used contrary to regulations disused on receipt of notice | 1 |

## SLAUGHTERHOUSES.

| | |
|---|---|
| Slaughterhouses on register | 7 |
| Notices served on occupiers | 2 |
| Change of occupiers | 1 |
| Slaughterhouses, inspections | 127 |

## WORKSHOPS ON REGISTER.

| | | |
|---|---|---|
| Workshop bakehouses | 33 | |
| Factory bakehouses | 3 | |
| Workshop laundries | 11 | |
| Factory laundries | 7 | |
| Other workshops | 68 | |
| Domestic workshops | 5 | |
| Total | — | 117 |
| Total Inspections under the Act | | 607 |
| Number of factories under the Inspector of Home Office | | 50 |
| Circular letters sent by Medical Officer of Health to employers of labour *re* outworkers | | 42 |

| | |
|---|---|
| Communications received from employers of labour ... | 2 |
| Notices received from Home Office *re* new workshops and change of occupants... ... ... ... | 14 |
| Nuisances detected by H.M. Inspector of Factories and reported to Medical Officer of Health ... ... | 4 |
| Communications received from Medical Officers of Health from other districts *re* outworkers in district | 1 |
| Communication to Chief Inspector of Factories *re* other matters ... ... ... ... ... | 3 |
| Lists of outworkers received from employers ... ... | 2 |
| Number of outworkers ... ... ... ... | 2 |
| Visits to Outworkers premises ... ... ... | 4 |
| Workshops measured as to cubic space, lighting and ventilation ... ... ... ... ... | 7 |
| Workshops, including bakehouses, lime-whitened ... | 71 |
| Notices served to abate nuisances ... ... ... | 8 |
| Inspections of workplaces ... ... ... ... | 211 |

### The Following Nuisances were Abated under the Act.

| | |
|---|---|
| Want of cleanliness ... ... ... ... ... | 7 |
| Want of ventilation ... ... ... ... ... | 1 |
| Overcrowding ... ... ... ... ... | 1 |
| Other nuisances ... ... ... ... ... | 2 |
| Sanitary accommodation, insufficient ... ... ... | 2 |
| ,, ,, unsuitable or defective ... | 1 |

### Work done in connection with Removal of Patients to Hospital.

| | |
|---|---|
| Number of houses disinfected, rooms .. ... ... | 344 |
| Schools disinfected ... ... ... ... ... | 4 |
| Patients removed to Sanatorium ... ... ... | 134 |
| Visits to Small Pox Hospital ... ... ... ... | 11 |
| Articles removed from houses for disinfection ... ... | 5105 |

## GOODS DISINFECTED, 1905.

| | | | |
|---|---|---|---|
| Beds ... ... | 365 | Jackets ... ... | 63 |
| Pillows ... ... | 445 | Skirts ... ... | 59 |
| Bolsters ... ... | 162 | Capes ... ... | 8 |
| Blankets ... ... | 507 | Suits of clothes ... | 5 |
| Sheets ... ... | 236 | Carpets ... ... | 49 |
| Counterpanes ... | 194 | Dresses ... ... | 137 |
| Mattresses ... ... | 92 | Furs ... ... | 8 |
| Overlays ... ... | 38 | Stockings pairs | 10 |
| Cushions ... ... | 96 | Pants pairs | 4 |
| Toilet covers ... ... | 233 | Combinations ... | 4 |
| Valances ... ... | 56 | Vests ... ... | 24 |
| Bodices ... ... | 117 | Drawers pairs | 5 |
| Towels ... ... | 108 | Cloaks ... ... | 5 |
| Table covers ... ... | 47 | Night shirts ... ... | 5 |

| | | |
|---|---|---|
| Frocks | ... | 8 |
| Boxes of linen | ... | 120 |
| Shawls | ... | 46 |
| Waistcoats | ... | 49 |
| Coats | ... | 28 |
| Trousers | pairs | 38 |
| Knickers | pairs | 52 |
| Handkerchiefs | ... | 4 |
| Caps | ... | 6 |
| Night Dresses | ... | 31 |
| Suits of clothes | ... | 31 |
| Petticoats | ... | 16 |
| Dressing gowns | ... | 27 |
| Shirts | ... | 33 |
| Child's clothes | ... | 58 |
| Books | ... | 316 |
| Rugs | ... | 64 |
| Mats | ... | 49 |
| Blinds | ... | 32 |
| Pillow slips | ... | 17 |
| Aprons | ... | 50 |
| Box covers | ... | 5 |
| Bags | ... | 15 |
| Curtains | ... | 9 |
| Slippers | pairs | 10 |
| Corsets | pairs | 5 |
| Hats | ... | 4 |
| Sundries | ... | 910 |
| TOTAL ARTICLES | ... | 5,105 |

BOROUGH ENGINEER'S & SURVEYOR'S OFFICE.
SOUTHEND-ON-SEA.
*23rd February, 1906.*

Dr. NASH, Medical Officer of Health.

DEAR SIR,

I have pleasure in sending you herewith information with reference to sewers laid in the past year in the Borough :—

| | |
|---|---|
| Number of houses connected to public sewers ... ... | 936 |
| Number of houses connected to cesspools ... ... | 24 |
| Number of earth closets ... ... ... ... | 2 |
| Number of houses in course of erection ... ... | 410 |
| Number of Habitation Certificates applied for ... ... | 994 |
| Habitation Certificates granted ... ... ... | 960 |
| Number of Habitation Certificates deferred ... ... | 34 |
| Length of sewers laid by Estate Owners | about 15,120 feet. |

| | | |
|---|---|---|
| Soil sewer, | 9in. pipes ... ... ... | 8,300 ft. |
| | 12in. ,, ... ... ... | 1,781 ft. |
| | 15in. ,, ... ... ... | 515 ft. |
| | | 10,596 ft. |

Storm water drains, 6in., 9in., 12in., 15in. and 18in. pipes, total length, 12,036 ft.

Yours faithfully,
E. J. ELFORD,
*Borough Surveyor.*

# Schools.

## Sanitary Arrangements.

I have pleasure in stating that the Town Council adopted a recommendation of the Education Committee to provide new cloak room accommodation for the boys and girls' departments at Leigh Road Schools.

## Defective Children.

During 1905 I examined and reported upon a large number of defective children in the various schools in the Borough. The Education Committee have considered the question of providing a special class for some of these.

## Admission of Children under 5.

The Education Committee have fixed the age for provision of accommodation and for future admissions at five years of age. I consider this a wise and economical step alike from a financial, a public health, and an individual point of view.

## Underfed School Children.

Mr. C. Pagett, the Senior School Attendance Officer, has been empowered to make special application for relief for school children in a state of destitution under the Relief (School Children) Order, 1905.

## New Schools.

Sites have been purchased for two new schools in Bournemouth Park Road and Barlands, West Road.

## School Closure for Infectious Diseases.

On April 14th the Infants' Department, Brewery Road Schools, was closed for three weeks on account of mumps. This period included the usual Easter Holidays.

Towards the end of the year the prevalence of measles necessitated the closing of the following departments :—

November 1st, Infants Department, London Road Schools, for three weeks.

November 13th, Infants' Department, Prittlewell (C.E.) Schools, for three weeks.

December 6th, Infants' Department, Leigh Road Schools, until after the Christmas Holidays.

December 6th, Babies' Class, Brewery Road Schools, until after the Christmas Holidays.

December 13th, Infants' Department, Brewery Road Schools, until after the Christmas Holidays.

I advised closure of all the schools a week earlier for the Christmas Holidays owing to the slight prevalence of Scarlet Fever among Leigh Road school children, and the general prevalence of measles, colds, and other illnesses.

# Water Supply.

By the courtesy of Mr. C. S. Bilham, I inspected the Water Works at Fobbing, Vange, Thundersley, Burches, Nobles Green and Oakwood.

I was pleased to note the evidences of efficient management, and approved of the precautions taken to prevent fouling of the water supplies.

The water, as supplied by the Southend Water Works Company has been of excellent quality throughout 1905.

The following are the results of analysis of tap water taken at the Borough Sanatorium in August last:—

PHYSICAL PROPERTIES—

Colour, clear.
Floating matter, none.
Deposit, none.

| CHEMICAL PROPERTIES— | Grains per gallon. |
|---|---|
| Chlorine | 15.3 |
| Free Ammonia | Nil. |
| Albuminoid Ammonia | 0.002 |
| Nitrates | Inappreciable. |
| Nitrites | None. |
| Hardness—Temporary | 9.1 |
| Permanent | 0.5 |

BACTERIOLOGICAL PROPERTIES—

55 Colonies per cubic centimetre capable of growing under aerobic conditions in nutrient jelly after 40 hours incubation at 20 deg. C. (as determined by naked eye examination).

No. B. Coli found in 20c.c.'s specially examined.

It is obvious that the water is of a most excellent potable character.

It is also exceedingly palatable because of its purity, and can be best appreciated by those who having it in daily use visit London for a day or two, when the contrast in the palatability of the London water is very obvious.

The Southend water supply is one of the most valuable of the assets of the district, and at all points should be jealously guarded by all parties concerned.

# Summary of Improvements for the Year 1905.

Voluntary Notification of Pulmonary Phthisis with Tuberculous Expectoration.

Continuation of Systematic House to House Inspection.

Continuation of Drainage of Sea View Estate.

Sealing of Byelaws for Common Lodging Houses.

Exhibition of Spit Notices.

Extension of Surface Water Sewers Scheme.

Cementing and Painting walls of old Scarlet Fever Block.

Maintained Improved sanitary condition of Cowsheds, Dairies, and Milkshops.

Weekly Return of Births from Sub-Registrar.

The Provision of Diphtheria Antitoxin in necessitous cases.

Cartage of Refuse outside the Borough.

Byelaws for Offensive Trades.

## IN PROGRESS AND UNDER CONSIDERATION.

Enlargement of Sanatorium.

Erection of Refuse Destructor.

Further Extension of Sewer to Leigh Cliff Estate.

Drainage of Leigh Cliff Estate.

Sanitary Arrangements at Bournes Green.

Lethal Chamber for Stray Dogs.

Adoption of Model Byelaw 20 (5) for Rural Districts (1903) in lieu of existing paragraph of Byelaw 66 for Urban Districts.

New Byelaws for Slaughterhouses.

# The Borough Laboratory.

A large amount of work has again been done in connection with infectious diseases, the water supply, and other matters, including shellfish, sea water and mud.

During 1905 no fewer than 1,015 examinations were made in connection with the prevention of infectious diseases. 445 swabs were submitted by doctors in connection with suspected diphtheria, or during convalescence after diphtheria among patients that had been treated at home. In 97 instances the diphtheria bacillus was found to be present. 36 specimens of blood were submitted for the Widal reaction. In seven instances a positive Widal reaction was obtained. 33 specimens of sputum were submitted for examination for the tubercle bacillus, which was found in 12 specimens.

470 examinations were made in connection with hospital administration. On two occasions the diphtheria bacillus was found to be present in the throats of persons admitted to hospital suffering from Scarlet Fever. This enabled me to take proper preventive measures, and in no case was there any further spread. I continued during the year to undertake a large amount of work for the Law and Parliamentary Committee.

# Borough Sanatorium.

The enlargement of the Sanatorium is receiving the attention of the Health Committee. Several plans have been prepared and discussed, but a final scheme has not yet been approved.

The Health Committee recognises the importance of proceeding with this work, and I have no doubt that a scheme will be recommended to the Council before very long.

The following table gives a summary of the patients treated in the Borough Sanatorium during 1905 :—

| DISEASE. | Remaining in the Sanatorium Dec. 31, 1904. | Admitted during 1905. | Total number treated during 1905. | Number discharged in 1905. | Number dying in 1905. | Remaining in the Sanatorium Dec. 31, 1905. |
|---|---|---|---|---|---|---|
| Scarlet Fever ... ... | 2 | 66 | 68 | 44 | — | 24 |
| Diphtheria ... ... ... | 1 | 57 | 58 | 49 | 2 | 7 |
| Typhoid Fever ... ... | 1 | 11 | 12 | 8 | 3 | 1 |
| Other Diseases ... ... | — | 2 | 2 | — | 2 | — |
| TOTALS | 4 | 136 | 140 | 101 | 7 | 32 |

The average stay of each patient in the Sanatorium was 33 days.

The table given above shows a satisfactory record.

The following table shows the number of patients admitted to the Sanatorium each year during the past eight years :—

| | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|---|---|
| Patients attended by Medical Supt. ... | 87 | 93 | 73 | 95 | 173 | 151 | 83 | 123 |
| " " other Doctors ... | 68 | 56 | 89 | 78 | 93 | 25 | 20 | 13 |
| Totals | 155 | 149 | 162 | 173 | 266 | 176 | 103 | 136 |

The next table shows the number of cases of each disease treated in the Sanatorium and Small Pox Hospital for the past eight years :—

| DISEASE. | 1898 | | 1899 | | 1900 | | 1901 | | 1902 | | 1903 | | 1904 | | 1905 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Scarlet Fever ... | 77 | 3 | 113 | 1 | 107 | 1 | 106 | 3 | 108 | 1 | 74 | 1 | 46 | 0 | 68 | 0 |
| Diphtheria ... | 23 | 2 | 4 | 0 | 10 | 1 | 54 | 3 | 118 | 11 | 59 | 2 | 46 | 0 | 58 | 2 |
| Typhoid Fever ... | 54 | 12 | 32 | 6 | 41 | 5 | 45 | 7 | 67 | 6 | 58 | 6 | 14 | 1 | 12 | 3 |
| Other Diseases ... | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 9 | 1 | 5 | 0 | 6 | 0 | 2 | 2 |
| Smallpox ... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 25 | 5 | 5 | 0 | 1 | 0 | 0 | 0 |
| | 156 | 17 | 149 | 7 | 162 | 8 | 207 | 14 | 327 | 21 | 201 | 9 | 113 | 1 | 140 | 7 |

In the following table the percentages of deaths from each disease treated in the Borough Sanatorium since 1898 are calculated according to the method of the Registrar General, by adding together the admissions, discharges, and deaths; dividing this total by two and calculating the percentages on the resultant. The figures in parentheses show the total number under treatment each year for each disease :—

| | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 |
|---|---|---|---|---|---|---|---|---|
| Total Case Rate ... | (162) 11·41 | (166) 4·66 | (177) 5·24 | (207) 8·11 | (302) 7·02 | (196) 5·08 | (113) 0·95 | (122) 5·73 |
| Scarlet Fever ... | (81) 4·11 | (125) 0·88 | (120) 0 99 | (106) 3·58 | (108) 1·10 | (74) 1·56 | (46) 0·00 | (55) 0·00 |
| Diphtheria ... ... | (23) 9·30 | (4) 0·00 | (10) 10·00 | (54) 6·25 | (118) 10·04 | (62) 3·63 | (46) 0·00 | (54) 3·70 |
| Typhoid Fever ... | (56) 20·9 | (37) 17·9 | (40) 12·9 | (45) 17·72 | (67) 9·09 | (58) 10·34 | (14) 6·66 | (11) 27·27 |
| Other Diseases ... | (2) 50·0 | — | (1) 100·0 | (1) 0·0 | (9) 11·11 | (5) 0·0 | (6) 0·00 | (2) 100·0 |

The tremendous and satisfactory fall in the death rate of Diphtheria during the last few years is coincident with an earlier and increased use of Antitoxin. The few cases of Typhoid Fever were of a very severe type. (See remarks under Typhoid Fever.)

The number of regular nurses employed at the Sanatorium is seven, besides the matron. Temporary nurses are engaged as required.

I have abstracted the following items of expenditure and receipts for the year ending March 31st, 1905, from the Borough Accountant's Abstract of Accounts.

## HOSPITALS EXPENDITURE.

| | | | | | | |
|---|---|---|---|---|---|---|
| SANATORIUM— | | | | | | |
| Salaries and Wages— | | | | | | |
| Medical Officer | 60 | 0 | 0 | | | |
| Matron | 65 | 0 | 0 | | | |
| Nurses and Probationers | 135 | 4 | 4 | | | |
| Servants and Wardmaids | 93 | 0 | 0 | | | |
| Laundresses | 76 | 3 | 6 | | | |
| Porter and Workmen | 243 | 7 | 11 | | | |
| | | | | 672 | 15 | 9 |
| Uniforms, Clothing for Patients, Linen and Drapery | | | | 41 | 6 | 5 |
| Provisions | | | | 505 | 3 | 10 |
| Crockery and Ironmongery | | | | 58 | 7 | 0 |
| Medicines, Surgical Appliances and Disinfectants | | | | 65 | 1 | 6 |
| Repairs and Alterations | | | | 56 | 13 | 0 |
| Rates, Taxes and Insurance | | | | 25 | 9 | 2 |
| Rent of outside House | | | | 33 | 16 | 0 |
| Water Supply | | | | 38 | 18 | 9 |
| Gas Supply | | | | 91 | 9 | 11 |
| Coal, Coke and Firewood | | | | 88 | 9 | 0 |
| Re-making Mattresses | | | | 13 | 11 | 2 |
| Advertising, Printing, Stationery, Stamps, &c. | | | | 17 | 14 | 1 |
| Rent of Telephones | | | | 1 | 0 | 1 |
| Agreement and Contract Stamps | | | | 4 | 12 | 0 |
| Garden | | | | 13 | 12 | 0 |
| Removing Patients to Hospital | | | | 22 | 5 | 0 |
| Team Labour | | | | 2 | 12 | 3 |
| Timber, Bricks, Cement | | | | 16 | 14 | 5 |
| LABORATORY— | | | | | | |
| Chemicals and Sundries | 4 | 0 | 2 | | | |
| Attendants Wages | 15 | 18 | 0 | | | |
| | | | | 19 | 18 | 2 |
| | | | | £1,789 | 9 | 6 |

Smallpox Hospital—

| | £ | s. | d. |
|---|---|---|---|
| Maintenance and Medicines, &c. | 17 | 13 | 6 |
| Nursing | 17 | 7 | 2 |
| Ambulance and Cartage | 3 | 15 | 0 |
| Gas, Water, Coal | 4 | 14 | 3 |
| Fixing Fence | 9 | 6 | 1 |
| Wages of Workmen | 38 | 8 | 6 |
| Insurance Premium | 1 | 6 | 7 |
| | £92 | 11 | 1 |

## HOSPITALS INCOME.

| | £ | s. | d. |
|---|---|---|---|
| Establishment Grant—Essex County Council | 94 | 10 | 0 |
| Receipts from Patients | 161 | 15 | 3 |
| Sale of Antitoxin | 1 | 3 | 10 |
| Sale of Potatoes | 0 | 10 | 0 |
| | £257 | 19 | 1 |
| Net Expenditure—Sanatorium | £1,531 | 10 | 5 |

# Summary of Meteorological Notes for 1905.

*January.*—Weather variable. Sea frozen at Southend on the 16th and the 28th. Sunshine 90¾ hours. Rainfall 0.85 inches. Rain fell on 10 days.

*February.*—On the whole a mild open month. Prevailing winds, westerly. Sunshine, 108½ hours. Rainfall 0.58 inches. Rain fell on 12 days.

*March.*—Boisterous, but mild. Sunshine, 191¾ hours. Rain fell on 21 days. Rainfall 2.15 inches.

*April.*—Showery, rather cool. Sunshine, 122¼ hours. Rain fell on 18 days. Rainfall 2.48 inches.

*May.*—Sunshine, 274 hours. Rain fell on 8 days. Rainfall, 0.80. Highest shade temperature, 79° F. Highest ground temperature (at 1ft. depth) 63° F.

*June.*—Sunshine, 194¼ hours. Rain fell on 15 days. Rainfall, 3.57 inches. Highest shade temperature, 78° F. Highest ground temperature (at 1ft. depth) 65° F.

*July.*—Sunshine, 285½ hours. Rain fell on 6 days. Rainfall 0.29 inches. Greatest rainfall in 1 day was 0.11, on the 22nd. Highest shade temperature, 84° F. Highest ground temperature (at 1ft. depth) 71° F. The ground temperature at a depth of 1ft exceeded 60° F. during the whole of the month.

*August.*—Sunshine, 209 hours. Rain fell on 12 days. Rainfall 1.73 inches. Highest shade temperature, 77° F. Ground temperature (at 1ft. depth) exceeded 60° F. until the 31st.

*September.*—Sunshine, 131¾ hours. Rain fell on 12 days. Rainfall, 1.62 inches. Ground temperature fell below 60° F. (at 1ft. depth) from the 11th.

*October.*—Sunshine, 125½ hours. Rain fell on 10 days. Rainfall, 1.00 inches.

*November.*—Sunshine 70¼ hours. Rain fell on 17 days. Rainfall 2.27 inches.

*December.*—Sunshine 41½ hours. Rain fell on 10 days. Rainfall, 0.57 inches.

| DATE. | MAXIMUM. | | | | | | | | | | | | MINIMUM. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December | January | February | March | April | May | June | July | August |
| **1** | 33 | 51 | 45 | 59 | 57 | 63 | 73 | 72 | 63 | 55 | 52 | 44 | 24 | 38 | 33 | 44 | 44 | 52 | 57 | 51 |
| **2** | 39 | 46 | 43 | 55 | 55 | 63 | 72 | 73 | 67 | 54 | 54 | 41 | 29 | 33 | 32 | 34 | 42 | 56 | 59 | 58 |
| **3** | 45 | 48 | 44 | 55 | 57 | 70 | 73 | 67 | 73 | 59 | 49 | 41 | 38 | 36 | 27 | 35 | 38 | 55 | 58 | 58 |
| **4** | 46 | 46 | 45 | 52 | 57 | 69 | 67 | 70 | 71 | 58 | 53 | 41 | 41 | 39 | 31 | 45 | 42 | 54 | 57 | 59 |
| **5** | 46 | 56 | 47 | 55 | 57 | 56 | 71 | 71 | 69 | 5 | 53 | 46 | 37 | 42 | 40 | 32 | 38 | 47 | 57 | 50 |
| **6** | 54 | 48 | 49 | 55 | 63 | 53 | 72 | 72 | 70 | 56 | 53 | 51 | 41 | 40 | 38 | 32 | 41 | 41 | 50 | 55 |
| **7** | 50 | 47 | 48 | 51 | 66 | 55 | 75 | 68 | 66 | 54 | 49 | 54 | 40 | 33 | 36 | 31 | 46 | 50 | 57 | 57 |
| **8** | 49 | 48 | 48 | 46 | 59 | 62 | 76 | 73 | 66 | 58 | 45 | 50 | 39 | 35 | 40 | 36 | 37 | 50 | 57 | 55 |
| **9** | 44 | 45 | 49 | 43 | 58 | 58 | 79 | 66 | 66 | 61 | 48 | 48 | 33 | 38 | 35 | 40 | 42 | 49 | 59 | 57 |
| **10** | 42 | 48 | 48 | 43 | 66 | 62 | 76 | 73 | 66 | 58 | 49 | 45 | 33 | 33 | 39 | 42 | 45 | 50 | 61 | 50 |
| **11** | 47 | 43 | 50 | 54 | 69 | 60 | 78 | 69 | 60 | 58 | 54 | 39 | 37 | 30 | 39 | 40 | 44 | 53 | 59 | 48 |
| **12** | 41 | 45 | 48 | 54 | 60 | 60 | 80 | 70 | 65 | 53 | 49 | 43 | 31 | 31 | 40 | 43 | 41 | 53 | 59 | 54 |
| **13** | 43 | 46 | 52 | 60 | 56 | 67 | 80 | 73 | 69 | 53 | 44 | 44 | 33 | 38 | 44 | 42 | 44 | 49 | 58 | 59 |
| **14** | 39 | 51 | 52 | 60 | 58 | 64 | 84 | 73 | 63 | 53 | 42 | 45 | 33 | 37 | 39 | 45 | 38 | 49 | 60 | 54 |
| **15** | 37 | 47 | 49 | 58 | 60 | 67 | 79 | 71 | 64 | 53 | 42 | 42 | 22 | 41 | 39 | 43·5 | 38 | 56 | 59 | 59 |
| **16** | 41 | 52 | 52 | 56 | 59 | 71 | 70 | 67 | 62 | 56 | 38 | 42 | 22 | 42 | 42 | 42 | 41 | 58 | 53 | 52 |
| **17** | 40 | 52 | 52 | 49 | 63 | 65 | 75 | 67 | 64 | 49 | 41 | 43 | 29 | 34 | 43 | 37 | 44 | 55 | 56 | 57 |
| **18** | 41 | 44 | 49 | 45 | 65 | 65 | 73 | 69 | 60 | 53 | 41 | 44 | 27 | 36 | 37 | 35 | 44 | 54 | 52 | 59 |
| **19** | 41 | 48 | 57 | 45 | 65 | 66 | 72 | 70 | 65 | 51 | 43 | 50 | 30 | 30 | 36 | 37 | 45 | 54 | 55 | 53 |
| **20** | 37 | 43 | 52 | 47 | 60 | 67 | 81 | 70 | 65 | 51 | 43 | 47 | 28 | 35 | 42 | 37 | 43 | 54 | 60 | 57 |
| **21** | 41 | 46 | 52 | 49 | 58 | 70 | 77 | 70 | 63 | 47 | 47 | 50 | 32 | 35 | 40 | 36 | 35 | 53 | 61 | 57 |
| **22** | 36 | 41 | 56 | 50 | 52 | 75 | 82 | 73 | 61 | 47 | 50 | 46 | 32 | 33 | 40 | 37 | 34 | 50 | 60 | 51 |
| **23** | 40 | 40 | 56 | 52 | 56 | 67 | 73 | 66 | 57 | 49 | 46 | 42 | 34 | 36 | 42 | 35 | 39 | 47 | 56 | 48 |
| **24** | 43 | 40 | 55 | 52 | 56 | 73 | 76 | 71 | 58 | 44 | 49 | 43 | 36 | 35 | 39 | 37 | 42 | 54 | 58 | 57 |
| **25** | 47 | 46 | 49 | 53 | 57 | 71 | 79 | 71 | 59 | 47 | 53 | 46 | 30 | 34 | 38 | 45 | 48 | 56 | 60 | 57 |
| **26** | 41 | 46 | 50 | 59 | 57 | 67 | 83 | 71 | 59 | 49 | 45 | 41 | 26 | 46 | 42 | 45 | 41 | 53 | 61 | 58 |
| **27** | 39 | 45 | 49 | 58 | 71 | 78 | 78 | 66 | 59 | 56 | 45 | 42 | 27 | 32 | 37 | 47 | 48 | 54 | 54 | 54 |
| **28** | 48 | 45 | 51 | 54 | 72 | 74 | 79 | 67 | 62 | 53 | 46 | 42 | 32 | 31 | 44 | 45 | 57 | 55 | 56 | 54 |
| **29** | 45 | ... | 56 | 55·5 | 79 | 66 | 77 | 65 | 63 | 54 | 44 | 45 | 32 | ... | 44 | 44 | 53 | 59 | 55 | 52 |
| **30** | 47 | .. | 55 | 57 | 71 | 67 | 75 | 65 | 65 | 53 | 44 | 41 | 37 | ... | 35 | 42 | 52 | 60 | 54 | 52 |
| **31** | 47 | ... | 55 | ... | 63 | ... | ... | 63 | ... | ... | ... | 36 | 37 | ... | 38 | ... | 51 | ... | ... | 49 |

# METEOROLOGICAL READINGS, 1905.

THERMOMETRIC READINGS.

| Date. | MAXIMUM. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| 1 | 33 | 51 | 45 | 59 | 57 | 63 | 73 | 72 | 63 | 55 | 52 | 44 |
| 2 | 39 | 46 | 43 | 55 | 55 | 63 | 72 | 73 | 67 | 54 | 54 | 41 |
| 3 | 45 | 48 | 44 | 55 | 57 | 70 | 73 | 67 | 73 | 59 | 49 | 41 |
| 4 | 46 | 46 | 45 | 52 | 57 | 69 | 67 | 70 | 71 | 58 | 53 | 41 |
| 5 | 46 | 56 | 47 | 55 | 57 | 56 | 71 | 71 | 69 | 5 | 53 | 46 |
| 6 | 54 | 48 | 49 | 55 | 63 | 53 | 72 | 72 | 70 | 56 | 53 | 51 |
| 7 | 50 | 47 | 48 | 51 | 66 | 55 | 75 | 68 | 66 | 54 | 49 | 54 |
| 8 | 49 | 48 | 48 | 46 | 59 | 62 | 76 | 73 | 66 | 58 | 45 | 50 |
| 9 | 44 | 45 | 49 | 43 | 58 | 58 | 79 | 66 | 66 | 61 | 48 | 48 |
| 10 | 42 | 48 | 48 | 43 | 66 | 62 | 76 | 73 | 66 | 58 | 49 | 45 |
| 11 | 47 | 43 | 50 | 54 | 69 | 60 | 78 | 69 | 60 | 58 | 54 | 39 |
| 12 | 41 | 45 | 48 | 54 | 60 | 60 | 80 | 70 | 65 | 53 | 49 | 43 |
| 13 | 43 | 46 | 52 | 60 | 56 | 67 | 80 | 73 | 69 | 53 | 44 | 44 |
| 14 | 39 | 51 | 52 | 60 | 58 | 64 | 84 | 73 | 63 | 53 | 42 | 45 |
| 15 | 37 | 47 | 49 | 58 | 60 | 67 | 79 | 71 | 64 | 53 | 42 | 42 |
| 16 | 41 | 52 | 52 | 56 | 59 | 71 | 70 | 67 | 62 | 56 | 38 | 42 |
| 17 | 40 | 52 | 52 | 49 | 63 | 65 | 75 | 67 | 64 | 49 | 41 | 43 |
| 18 | 41 | 41 | 49 | 45 | 65 | 65 | 73 | 69 | 60 | 53 | 41 | 44 |
| 19 | 41 | 48 | 57 | 45 | 65 | 66 | 72 | 70 | 65 | 51 | 43 | 50 |
| 20 | 37 | 43 | 52 | 47 | 60 | 67 | 81 | 70 | 65 | 51 | 43 | 47 |
| 21 | 41 | 46 | 52 | 49 | 58 | 70 | 77 | 70 | 63 | 47 | 47 | 50 |
| 22 | 36 | 41 | 56 | 50 | 52 | 75 | 82 | 73 | 61 | 47 | 50 | 46 |
| 23 | 40 | 40 | 56 | 52 | 56 | 67 | 73 | 66 | 57 | 49 | 46 | 42 |
| 24 | 43 | 40 | 55 | 52 | 56 | 73 | 76 | 71 | 58 | 44 | 49 | 43 |
| 25 | 47 | 46 | 49 | 53 | 57 | 71 | 79 | 71 | 59 | 47 | 53 | 46 |
| 26 | 41 | 46 | 50 | 59 | 57 | 67 | 83 | 71 | 59 | 49 | 45 | 41 |
| 27 | 39 | 45 | 49 | 58 | 71 | 78 | 78 | 66 | 59 | 56 | 45 | 42 |
| 28 | 48 | 45 | 51 | 54 | 72 | 74 | 79 | 67 | 62 | 53 | 46 | 42 |
| 29 | 45 | ... | 56 | 55·5 | 79 | 66 | 77 | 65 | 63 | 54 | 44 | 45 |
| 30 | 47 | .. | 55 | 57 | 71 | 67 | 75 | 65 | 65 | 53 | 44 | 41 |
| 31 | 47 | ... | 55 | ... | 63 | ... | ... | 63 | ... | ... | ... | 36 |

| Date. | MINIMUM. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| 1 | 24 | 38 | 33 | 44 | 44 | 52 | 57 | 51 | 65 | 43 | 39 | 34 |
| 2 | 29 | 33 | 32 | 34 | 42 | 56 | 59 | 58 | 57 | 40 | 39 | 30 |
| 3 | 38 | 36 | 27 | 35 | 38 | 55 | 58 | 58 | 58 | 41 | 44 | 35 |
| 4 | 41 | 39 | 31 | 45 | 42 | 54 | 57 | 59 | 56 | 48 | 38 | 35 |
| 5 | 37 | 42 | 40 | 32 | 38 | 47 | 57 | 50 | 60 | 37 | 38 | 35 |
| 6 | 41 | 40 | 38 | 32 | 41 | 41 | 50 | 55 | 58 | 35 | 31 | 38 |
| 7 | 40 | 33 | 36 | 31 | 46 | 50 | 57 | 57 | 53 | 44 | 32 | 41 |
| 8 | 39 | 35 | 40 | 36 | 37 | 50 | 57 | 55 | 54 | 41 | 36 | 36 |
| 9 | 33 | 38 | 35 | 40 | 42 | 49 | 59 | 57 | 54 | 58 | 42 | 32 |
| 10 | 33 | 33 | 39 | 42 | 45 | 50 | 61 | 50 | 58 | 45 | 41 | 27 |
| 11 | 37 | 30 | 39 | 40 | 41 | 53 | 59 | 48 | 46 | 46 | 42 | 27 |
| 12 | 31 | 31 | 40 | 43 | 41 | 53 | 59 | 54 | 47 | 48 | 40 | 31 |
| 13 | 33 | 38 | 41 | 42 | 44 | 49 | 58 | 59 | 49 | 34 | 37 | 34 |
| 14 | 33 | 37 | 39 | 45 | 38 | 49 | 60 | 54 | 42 | 38 | 31 | 40 |
| 15 | 22 | 41 | 39 | 43·5 | 38 | 56 | 59 | 59 | 47 | 31 | 32 | 35 |
| 16 | 22 | 42 | 42 | 42 | 41 | 58 | 53 | 52 | 46 | 29 | 29 | 36 |
| 17 | 29 | 34 | 43 | 37 | 44 | 55 | 56 | 57 | 54 | 34 | 31 | 38 |
| 18 | 27 | 36 | 37 | 35 | 44 | 54 | 52 | 59 | 48 | 36 | 34 | 35 |
| 19 | 30 | 30 | 36 | 37 | 45 | 54 | 55 | 53 | 46 | 33 | 31 | 32 |
| 20 | 28 | 35 | 42 | 37 | 43 | 54 | 60 | 57 | 41 | 30 | 29 | 37 |
| 21 | 32 | 35 | 40 | 36 | 35 | 53 | 61 | 57 | 51 | 30 | 32 | 43 |
| 22 | 32 | 33 | 40 | 37 | 34 | 50 | 60 | 51 | 53 | 33 | 34 | 40 |
| 23 | 34 | 36 | 42 | 35 | 39 | 47 | 56 | 48 | 52 | 33 | 33 | 38 |
| 24 | 36 | 35 | 39 | 37 | 42 | 54 | 58 | 57 | 50 | 29 | 37 | 38 |
| 25 | 30 | 34 | 38 | 45 | 48 | 56 | 60 | 57 | 51 | 28 | 28 | 33 |
| 26 | 26 | 46 | 42 | 45 | 41 | 53 | 61 | 58 | 49 | 31 | 37 | 33 |
| 27 | 27 | 32 | 37 | 47 | 48 | 54 | 54 | 54 | 46 | 35 | 41 | 39 |
| 28 | 32 | 31 | 41 | 45 | 57 | 55 | 56 | 54 | 49 | 40 | 37 | 37 |
| 29 | 32 | ... | 44 | 44 | 53 | 59 | 55 | 52 | 48 | 42 | 40 | 36 |
| 30 | 37 | ... | 35 | 42 | 52 | 60 | 54 | 52 | 40 | 42 | | 29 |
| 31 | 37 | ... | 38 | .. | 51 | ... | ... | 49 | ... | ... | ... | 28 |

| Date. | GROUND TEMPERATURE AT A DEPTH OF 1 FT. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| 1 | 31 | 38 | 39 | 48 | 50 | 63 | 65 | 69 | 60 | 54 | 47 | 40 |
| 2 | 36 | 39 | 39 | 48 | 50 | 62 | 65 | 69 | 60 | 54 | 47 | 40 |
| 3 | 39 | 39 | 38 | 46 | 50 | 65 | 66 | 69 | 61 | 52 | 48 | 40 |
| 4 | 41 | 39 | 39 | 46 | 50 | 63 | 66 | 68 | 63 | 55 | 47 | 40 |
| 5 | 41 | 38 | 40 | 48 | 50 | 58 | 66 | 66 | 63 | 53 | 47 | 40 |
| 6 | 44 | 38 | 40 | 48 | 50 | 55 | 66 | 65 | 64 | 50 | 47 | 40 |
| 7 | 42 | 38 | 40 | 48 | 51 | 55 | 66 | 65 | 63 | 51 | 45 | 44 |
| 8 | 43 | 38 | 40 | 43 | 52 | 55 | 68 | 65 | 60 | 51 | 45 | 41 |
| 9 | 41 | 38 | 40 | 43 | 52 | 55 | 68 | 65 | 61 | 51 | 45 | 44 |
| 10 | 39 | 38 | 40 | 43 | 54 | 57 | 69 | 65 | 61 | 53 | 45 | 40 |
| 11 | 40 | 41 | 40 | 46 | 55 | 58 | 69 | 65 | 60 | 53 | 45 | 40 |
| 12 | 38 | 39 | 40 | 49 | 55 | 58 | 69 | 65 | 58 | 53 | 45 | 38 |
| 13 | 38 | 38 | 40 | 49 | 55 | 60 | 70 | 65 | 58 | 53 | 41 | 38 |
| 14 | 36 | 38 | 40 | 51 | 54 | 60 | 71 | 65 | 60 | 50 | 41 | 38 |
| 15 | 35 | 39 | 40 | 51 | 53 | 63 | 71 | 67 | 58 | 50 | 40 | 38 |
| 16 | 35 | 43 | 45 | 52 | 53 | 65 | 71 | 68 | 58 | 49 | 40 | 38 |
| 17 | 35 | 42 | 45 | 50 | 53 | 63 | 69 | 68 | 59 | 56 | 40 | 41 |
| 18 | 34 | 42 | 45 | 48 | 53 | 63 | 68 | 68 | 60 | 45 | 40 | 40 |
| 19 | 35 | 42 | 45 | 43 | 53 | 63 | 66 | 67 | 59 | 46 | 40 | 41 |
| 20 | 34 | 40 | 45 | 43 | 56 | 63 | 68 | 66 | 59 | 46 | 40 | 41 |
| 21 | 34 | 42 | 45 | 45 | 54 | 65 | 70 | 66 | 58 | 46 | 40 | 40 |
| 22 | 34 | 41 | 45 | 45 | 53 | 64 | 70 | 65 | 59 | 45 | 40 | 41 |
| 23 | 34 | 39 | 45 | 45 | 53 | 65 | 70 | 65 | 58 | 45 | 40 | 43 |
| 24 | 34 | 39 | 45 | 45 | 53 | 65 | 70 | 65 | 57 | 45 | 40 | 40 |
| 25 | 35 | 39 | 45 | 45 | 55 | 65 | 68 | 65 | 57 | 43 | 40 | 40 |
| 26 | 35·5 | 39 | 45 | 45 | 55 | 63 | 69 | 65 | 58 | 46 | 40 | 65 |
| 27 | 35 | 34 | 45 | 45 | 55 | 65 | 70 | 66 | 57 | 45 | 40 | 48 |
| 28 | 36 | 39 | 45 | 49 | 59 | 65 | 70 | 65 | 56 | 45 | 40 | 38 |
| 29 | 36 | 39 | 45 | 49 | 61 | 65 | 70 | 63 | 57 | 43 | 40 | 41 |
| 30 | 37 | ... | 45 | 50 | 63 | 65 | 70 | 65 | 57 | 47 | 40 | 41 |
| 31 | 39 | ... | 46 | 50 | 62 | ... | 70 | 65 | 54 | .. | 40 | 40 |

| Date. | SOLAR MAXIMUM. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| 1 | 34 | 34 | 65 | 93 | 98 | 107 | 113 | 116 | 97 | 79 | 75 | 45 |
| 2 | 29 | 28 | 76 | 82 | 94 | 112 | 117 | 113 | 100 | 81 | 87 | 43 |
| 3 | 45 | 33 | 82 | 88 | 93 | 111 | 112 | 94 | 107 | 94 | 71 | 46 |
| 4 | 49 | 37 | 75 | 78 | 95 | 112 | 107 | 109 | 109 | 87 | 77 | 42 |
| 5 | 62 | 40 | 61 | 92 | 94 | 69 | 113 | 112 | 106 | 91 | 82 | 48 |
| 6 | 54 | 37 | 82 | 78 | 98 | 64 | 115 | 115 | 101 | 89 | 77 | 74 |
| 7 | 61 | 30 | 79 | 89 | 103 | 67 | 110 | 105 | 103 | 86 | 65 | 70 |
| 8 | 56 | 34 | 78 | 88 | 106 | 104 | 112 | 116 | 104 | 72 | 52 | 59 |
| 9 | 68 | 34 | 65 | 60 | 97 | 77 | 118 | 99 | 92 | 81 | 77 | 68 |
| 10 | 58 | 29 | 83 | 60 | 100 | 104 | 118 | 113 | 105 | 96 | 65 | 67 |
| 11 | 72 | 27 | 80 | 91 | 106 | 90 | 115 | 112 | 82 | 86 | 82 | 41 |
| 12 | 65 | 28 | 86 | 89 | 102 | 90 | 122 | 115 | 102 | 78 | 5 | 54 |
| 13 | 61 | 35 | 89 | 95 | 96 | 107 | 124 | 115 | 102 | 75 | 58 | 60 |
| 14 | 62 | 35 | 89 | 95 | 91 | 104 | 116 | 110 | 102 | 82 | 70 | 47 |
| 15 | 63 | 39 | 86 | 95·5 | 101 | 106 | 118 | 113 | 103 | 81 | 70 | 44 |
| 16 | 41 | 39 | 88 | 98 | 94 | 112 | 114 | 105 | 99 | 83 | 49 | 47 |
| 17 | 40 | 30 | 90 | 92 | 101 | 106 | 116 | 115 | 103 | 80 | 52 | 50 |
| 18 | 41 | 32 | 87 | 89 | 103 | 109 | 113 | 109 | 98 | 77 | 56 | 61 |
| 19 | 41 | 26 | 92 | 89 | 111 | 109 | 115 | 113 | 94 | 88 | 68 | 73 |
| 20 | 37 | 30 | 89 | 76 | 104 | 103 | 118 | 102 | 102 | 86 | 63 | 54 |
| 21 | 41 | 32 | 85 | 90 | 87 | 112 | 113 | 108 | 101 | 76 | 66 | 72 |
| 22 | 36 | 31 | 90 | 91 | 101 | 115 | 121 | 112 | 90 | 80 | 54 | 49 |
| 23 | 37 | 31 | 96 | 90 | 99 | 107 | 110 | 102 | 84 | 78 | 62 | 45 |
| 24 | 43 | 34 | 97 | 94 | 91 | 115 | 115 | 113 | 74 | 75 | 64 | 46 |
| 25 | 47 | 30 | 81 | 94 | 105 | 102 | 117 | 111 | 74 | 76 | 72 | .. |
| 26 | 41 | 30 | 90 | 87 | 105 | 98 | 116 | 113 | 78 | 68 | 64 | ... |
| 27 | 39 | 28·5 | 79 | 94 | 111 | 110 | 115 | 105 | 88 | 87 | 65 | 45 |
| 28 | 48 | 26 | 89 | 84 | 112 | 117 | 115 | 107 | 99 | 83 | 67 | 47 |
| 29 | 45 | .. | 94 | 96 | 120 | 93 | 116 | 103 | 98 | 83 | 58 | 55 |
| 30 | 47 | ... | 80 | 92 | 107 | 87 | 116 | 87 | 95 | 79 | ... | 68 |
| 31 | 47 | ... | 91 | ... | 104 | ... | ... | 108 | ... | ... | ... | 58 |

| Date. | SOLAR MINIMUM. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| 1 | 20 | 72 | 29 | 41 | 40 | 48 | 49 | 44 | 48 | 35 | 37 | 33 |
| 2 | 28 | 73 | 28 | 30 | 37 | 53 | 54 | 51 | 49 | 32 | 36 | 28 |
| 3 | 35 | 75 | 23 | 34 | 34 | 51 | 52 | 52 | 51 | 40 | 38 | 34 |
| 4 | 38 | 66 | 31 | 42 | 39 | 49 | 51 | 52 | 49 | 39 | 30 | 33 |
| 5 | 34 | 79 | 37 | 28 | 34 | 43 | 51 | 42 | 54 | 29 | 29 | 34 |
| 6 | 38 | 56 | 34 | 29 | 36 | 42 | 41 | 48 | 51 | 26 | 24 | 35 |
| 7 | 35 | 49 | 32 | 26 | 43 | 47 | 50 | 50 | 46 | 37 | 26 | 40 |
| 8 | 41 | 79 | 39 | 31 | 31 | 46 | 52 | 47 | 47 | 32 | 28 | 31 |
| 9 | 29 | 54 | 32 | 38 | 38 | 45 | 52 | 50 | 47 | 39 | 36 | 28 |
| 10 | 29 | 55 | 37 | 39 | 41 | 46 | 57 | 43 | 46 | 37 | 34 | 25 |
| 11 | 33 | 73 | 36 | 40 | 41 | 49 | 55 | 41 | 38 | 39 | 35 | 23 |
| 12 | 27 | 68 | 36 | 40 | 36 | 48 | 53 | 47 | 38 | 41 | 33 | 26 |
| 13 | 28 | 59 | 41 | 44 | 40 | 45 | 54 | 47 | 41 | 28 | 30 | 33 |
| 14 | 29 | 65 | 37 | 41 | 34 | 44 | 54 | 47 | 34 | 35 | 22 | 38 |
| 15 | 20 | 60 | 35 | 40 | 34 | 51 | 54 | 52 | 39 | 26 | 25 | 32 |
| 16 | 21 | 87 | 39 | 38 | 41 | 52 | 56 | 44 | 38 | 20·5 | 22 | 33 |
| 17 | 24 | 85 | 39 | 33 | 40 | 50 | 51 | 49 | 46 | 27 | 28 | 35 |
| 18 | 22 | 82 | 33 | 31 | 42 | 48 | 45 | 47 | 40 | 28 | 29 | 34 |
| 19 | 23 | 78 | 32 | 34 | 40 | 49 | 48 | 45 | 37 | 25 | 27 | 28 |
| 20 | 24 | 72 | 39 | 34 | 40 | 50 | 52 | 48 | 36 | 22 | 21 | 35 |
| 21 | 30 | 80 | 36 | 33 | 31 | 47 | 54 | 50 | 43 | 21 | 30 | 39 |
| 22 | 29 | 78 | 38 | 32 | 28 | 44 | 54 | 44 | 45 | 25 | 29 | 37 |
| 23 | 30 | 78 | 40 | 31 | 35 | 41 | 50 | 39 | 44 | 26 | 27 | 35 |
| 24 | 33 | 49 | 39 | 32 | 38 | 50 | 50 | 48 | 43 | 22 | 34 | 33 |
| 25 | 25 | 73 | 35 | 42 | 44 | 51 | 53 | 49 | 44 | 19 | 34 | 30 |
| 26 | 23 | 70 | 39 | 42 | 38 | 48 | 54 | 47 | 42 | 26 | 32 | 30 |
| 27 | 25 | 82 | 33 | 44 | 42 | 48 | 52 | 45 | 38 | 27 | 38 | 28 |
| 28 | 28 | 77 | 41 | 42 | 51 | 49 | 49 | 45 | 42 | 34 | 33 | 35 |
| 29 | 29 | ... | 41 | 40 | 48 | 43 | 49 | 45 | 41 | 34 | 30 | 33 |
| 30 | 35 | ... | 32 | 41 | 47 | 56 | 48 | 45 | 32 | 35 | 38 | 26 |
| 31 | 34 | ... | 32 | ... | 47 | ... | ... | 41 | .. | ... | ... | 26 |

| Date. | WIND. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| 1 | S S E | S W | N | S W | S S W | S W | S | W | W | N W | S | S |
| 2 | S W | W | N N W | E | S W | S W | S W | S E | WSW | N W | S E | WNW |
| 3 | S W | S W | W | S | N W | S | S W | S | W | S W | S | N W |
| 4 | S W | S W | S | W | N E | N E | N | S W | S W | N W | S W | S |
| 5 | S W | S W | W | N W | N W | N E | N W | S W | S | N W | S W | S W |
| 6 | W | S W | WSW | S W | N W | N | S W | S E | S W | WNW | W | S W |
| 7 | S | N E | S W | N W | N W | N N E | S | S W | S W | N E | N W | S W |
| 8 | S S W | E N E | S W | S | S W | N E | N E | S W | S W | W | S E | S W |
| 9 | WSW | S W | S W | N E | S W | N | S W | S W | S W | W | S E | W |
| 10 | S S W | W | S | N W | N W | N N E | S W | W | S W | N E | S W | N E |
| 11 | S W | N W | S | W E | N W | E | WSW | W | W | N W | E S E | N E |
| 12 | W | W | S S W | S E | N W | S E | W | S W | S W | W | N | N W |
| 13 | E | N W | S S W | N E | N | N E | S W | N E | N N W | W W | W E | N W |
| 14 | E | S W | S S E | S W | N | N E | S W | E | N | WSW | N | N |
| 15 | E | S W | S | N E | N N E | N E | N W | N E | N W | N | N W | S W |
| 16 | W | S W | S | N E | N E | N W | W | N E | N E | W | N N E | W |
| 17 | W | S W | E | N | N W | S | N S W | S W | N E | WSW | N E | S E |
| 18 | W | S W | W | N | N N W | S S W | N W | S W | W | N | N | S W |
| 19 | N E | N W | E S E | N | N | S W | W | S W | N W | W | N W | S W |
| 20 | E | N W | N E | N W | N | S W | W | S W | N | W S W | S W | W S W |
| 21 | N W | N E | E | N W | N | N W | WSW | S W | N E | N | S | S W |
| 22 | N E | N E | S E | W | S W | N E | WSW | WSW | N E | N W | S W | S E |
| 23 | S E | N N E | W | W | W | N N E | N W | S E | N E | N W | S W | S |
| 24 | W | S | S | S W | S W | N | S W | S W | W | N W | S | S W |
| 25 | N W | S | W | W | S W | N | S W | S W | W | W | S W | S |
| 26 | WSW | S | S E | S | S | S W | N E | S W | W | W | S S W | W |
| 27 | WSW | S W | S W | S W | S E | S W | W | N W | W E | W | N E | E |
| 28 | W | S W | S W | S | N | S E | S W | N W | W E | S W | S E | W |
| 29 | S W | ... | S | S E | N | N E | S W | N | N | S W | N W | W |
| 30 | W | ... | S W | S S W | S W | S W | S W | W | S W | S W | ... | E S E |
| 31 | S W | ... | WSW | ... | ... | ... | ... | W | ... | ... | ... | E |

| Date. | RAIN (INCHES). | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| 1 | ... | | 0·04 | . | 0·39 | ... | 0·05 | ... | 0·05 | ... | 0·23 | .. |
| 2 | 0·08 | ... | 0·05 | 0·02 | 9·07 | ... | ... | ... | | 0·01 | 0·03 | .. |
| 3 | . | ... | ... | ... | ... | .. | ... | 0·13 | .. | ... | 0·18 | ... |
| 4 | 0·19 | ... | 0·02 | 0·07 | ... | 0·05 | ... | 0·20 | ... | 0·07 | 0·02 | |
| 5 | 0·12 | ... | 0·14 | .. | | 1·18 | ... | .. | 0·18 | ... | ... | 0·12 |
| 6 | ... | ... | ... | 0·12 | ... | 0·34 | ... | ... | 0·07 | ... | . | 0·04 |
| 7 | .. | 0·12 | 0·01 | 0·12 | 0·03 | 0·24 | ... | 0·05 | 0·06 | ... | . | 0·01 |
| 8 | ... | ... | 0·07 | ... | ... | 0·37 | ... | ... | .. | .. | . | 0·15 |
| 9 | 0·08 | . | 0·02 | 0·44 | . | 0·30 | ... | . | 0·29 | ... | 0·08 | ... |
| 10 | ... | 0·04 | 0·13 | 0·61 | ... | 0·02 | ... | 0·04 | ... | ... | 0·32 | .. |
| 11 | ... | ... | 0·12 | | ... | 0·04 | ... | ... | 0·13 | 0·02 | 0·13 | Fog |
| 12 | ... | ... | 0·05 | ... | ... | 0·15 | ... | . | .. | ... | 0·23 | ... |
| 13 | ... | 0·09 | 0·18 | ... | ... | ... | ... | ... | ... | ... | 0·13 | 0·04 |
| 14 | . | ... | 0·13 | 0·07 | ... | ... | ... | .. | ... | ... | 0·10 | ... |
| 15 | ... | 0·02 | 0·18 | ... | ... | ... | ... | .. | ... | 0·16 | ... | ... |
| 16 | 0·28 | 0·02 | ... | ... | ... | 0·17 | ... | ... | .. | ... | ... | ... |
| 17 | ... | ... | 0·43 | 0·11 | .. | 0·19 | 0·07 | .. | ... | ... | ... | ... |
| 18 | ... | ... | ... | 0·18 | 0·07 | ... | ... | ... | ... | . | ... | ... |
| 19 | ... | ... | ... | 0·17 | 0·01 | ... | .. | 0·03 | ... | ... | ... | .. |
| 20 | . | 0·01 | ... | 0·03 | ... | ... | ... | 0·19 | ... | ... | ... | ... |
| 21 | .. | 0·14 | ... | ... | ... | .. | ... | ... | 0·10 | .. | 0·05 | ... |
| 22 | ... | ... | ... | ... | ... | ... | 0·12 | ... | . | .. | 0·10 | ... |
| 23 | ... | ... | 0·01 | ... | .. | .. | ... | 0·11 | ... | ... | .. | ... |
| 24 | ... | ... | ... | ... | ... | | . | .. | 0·21 | ... | 0·02 | ... |
| 25 | 0·05 | .. | 0·06 | 0·18 | .. | 0·03 | ... | ... | 0·25 | ... | 0·16 | ... |
| 26 | .. | ... | 0·01 | ... | . | 0·08 | . | 0·02 | 0·11 | 0·02 | ... | 0·10 |
| 27 | ... | 0·09 | 0·08 | .. | ... | ... | ... | 0·12 | | .. | 0·05 | 0·10 |
| 28 | ... | 0·05 | | 0·02 | ... | ... | .. | 0·25 | 0·07 | 0·15 | ... | ... |
| 29 | ... | ... | ... | . | ... | 0·28 | ... | 0·21 | ... | 0·03 | 0·17 | .. |
| 30 | ... | ... | ... | 0·20 | ... | 0·14 | ... | 0·10 | . | 0·34 | ... | ... |
| 31 | 0·02 | ... | ... | ... | 0·16 | ... | ... | ... | ... | ... | ... | .. |

| Date. | SUNSHINE (HOURS). | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| 1 | .. | 3 | 3 | 6¾ | 8½ | 7½ | 10 | 5½ | 3¼ | 1½ | ... | ... |
| 2 | ... | 7 | 5½ | 2½ | 4½ | 11½ | 13 | 13 | 1½ | 1 | 1 | ... |
| 3 | . | 8 | 4½ | 11 | 9½ | 9½ | 10 | .. | 8½ | 8½ | 4½ | ... |
| 4 | .. | 8 | 3½ | 1 | 11½ | 9 | 1 | 8½ | 3½ | 4½ | ... | ... |
| 5 | 2 | 8½ | 1 | 3½ | 8½ | ... | 3½ | 8½ | 4 | 2¼ | 3 | ... |
| 6 | .. | ... | 2 | 11 | 12½ | ... | 10 | 13 | 2½ | 9 | 5½ | 4½ |
| 7 | 1¾ | ... | ... | 1 | 9 | .. | 14 | 15 min | 4 | 1¼ | 7 | ½ |
| 8 | 1½ | 3½ | 4½ | 11 | 9 | 1½ | 14½ | 5½ | 10½ | ... | 2½ | ... |
| 9 | ¼ | ... | ... | .. | 13 | ... | 11 | ... | .. | 1 | ... | 5 |
| 10 | 5½ | ... | 6½ | .. | 13 | 6½ | 6½ | 12 | 2½ | 4½ | 4 | 6½ |
| 11 | 4¾ | 6½ | 4 | 1¾ | 9½ | 5/60 | 7½ | 8½ | 1½ | 2½ | ... | ... |
| 12 | 7 | 8½ | 6½ | 6½ | 10½ | .. | 9 | 8¼ | 10½ | 1½ | 5 | ... |
| 13 | 6 | .. | 10 | 7½ | 1 | 9 | 10½ | 6½ | 11 | ¼ | 2½ | 1½ |
| 14 | 6¼ | 2 | 6½ | 4½ | .. | 4½ | 14 | 11½ | 10½ | 8 | ... | ... |
| 15 | 4½ | ... | 3½ | ... | 13½ | 13½ | 8½ | 9 | 10½ | ... | 2½ | ... |
| 16 | 2½ | 2 | 4 | 7½ | 4½ | 13 | 4¾ | 6½ | 2½ | 8½ | 8 | ... |
| 17 | .. | 7½ | 5½ | 7 | 14 | 45 min | 8½ | 12½ | 9½ | 9 | . | ... |
| 18 | 7 | 4½ | 1½ | 2½ | 13 | 10 | 4¾ | . | 6½ | 7½ | ... | 2½ |
| 19 | 7 | 8 | 10½ | 2 | 10½ | 12 | 4½ | 10½ | 2 | 8 | . | 4¾ |
| 20 | .. | 5½ | 9½ | 1 | 4½ | 2½ | 13 | 2½ | 4½ | 7½ | 5½ | ... |
| 21 | 5 | 7½ | 6½ | 2 | ... | 10 | 10½ | 9½ | 3½ | 1½ | 2½ | 3½ |
| 22 | ... | 8½ | 9½ | 2 | 7½ | 13 | 12 | 7½ | 1 | 5½ | 6¼ | .. |
| 23 | ... | ... | 10¾ | 3½ | 10 | 13½ | 4 | 11½ | 2½ | 4½ | ... | ... |
| 24 | . | ... | 10 | 7½ | 9 | 10½ | 11½ | 8½ | 1 | ½ | 5½ | 4 |
| 25 | 3¾ | 2½ | 1 | 6 | 7½ | 1½ | ... | 4¾ | ... | 6½ | ½ | 4 |
| 26 | 6½ | ... | 10½ | ¾ | 7½ | 1½ | 9 | 4½ | ... | 1 | ... | ... |
| 27 | 4½ | 2½ | .. | ½ | 12½ | 11½ | 10 | 2½ | 10 min | 7½ | 5½ | ... |
| 28 | 4¼ | 5 | 8½ | 1½ | 13½ | 10½ | 10 | 2 | 2¾ | 4 | ½ | ... |
| 29 | 6½ | .. | 2½ | 8 | 13½ | ... | 9½ | 2½ | 6½ | 5½ | 2½ | ... |
| 30 | ... | ... | 8½ | 2½ | 10½ | ½ | 6½ | 10 min | 6 | 2½ | ... | 2¾ |
| 31 | 4½ | ... | 11½ | ... | 3 | ... | 12½ | 6½ | ... | ... | ... | 2 |

# Proceedings relating to Nuisances under the Public Health Acts during the year 1905.

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3rd Jan. Proceedings against M. R. Hughes, 203, North Road, for removing manure during prohibited hours.

Fined 10/-, including costs and 2/6 Witnesses fee.

10th Jan. „ „ Arthur Keyes, Eastwood, ditto.

Fined 5/- and 4/- costs.

(The above Prosecutions were both taken under the Byelaws relating to removal of offensive matter.) (Sec. 26 Public Health Amendment Act, 1890.)

## Table I.

Vital Statistics of Whole District during 1905 and previous years.

| YEAR. | Population Estimated to Middle of each Year. | BIRTHS. | | TOTAL DEATHS REGISTERED IN THE DISTRICT. | | | | TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT. | Deaths of Non-Residents Registered in Public Institutions in the District. | Deaths of Residents Registered in Public Institutions beyond the District. | NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Under 1 Year of Age | | At all Ages. | | | | | | |
| | | Number. | Rate. | Number. | Rate per 1,000 Births Registered. | Number | Rate. | | | | Number. | Rate. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1895 | 16,203 | 426 | 26·29 | 49 | 115 02 | 263 | 16 2 | 21 | 26 | 5 | 243 | 14·93 |
| 1896 | 17,529 | 474 | 27·04 | 74 | 147·67 | 295 | 16·8 | 20 | 25 | 6 | 276 | 15·74 |
| 1897 | 19,302 | 553 | 28 65 | 88 | 159·15 | 262 | 15 12 | 21 | 24 | 8 | 246 | 12·81 |
| 1898 | 22,583 | 603 | 26·70 | 103 | 170·81 | 350 | 15·49 | 34 | 39 | 18 | 329 | 14·56 |
| 1899 | 24,710 | 657 | 26·58 | 121 | 184·17 | 400 | 16·1 | 23 | 29 | 13 | 384 | 15·54 |
| 1900 | 27,721 | 739 | 26·62 | 135 | 182 40 | 416 | 14·64 | 34 | 37 | 21 | 400 | 14·44 |
| 1901 | 29,793 | 781 | 26·21 | 140 | 179·25 | 507 | 17 01 | 55 | 23 | 28 | 502 | 16·84 |
| 1902 | 33,537 | 839 | 25·01 | 84 | 100·11 | 439 | 13·09 | 53 | 22 | 29 | 446 | 13·29 |
| 1903 | 37,283 | 935 | 25 07 | 111 | 118·71 | 448 | 12·01 | 33 | 22 | 17 | 443 | 11·88 |
| 1904 | 41,944 | 1,007 | 24·01 | 180 | 178·74 | 592 | 14·11 | 35 | 26 | 30 | 596 | 14·20 |
| Averages for years 1895-1904 | 27,060 | 701 | 26·21 | 108 | 153·60 | 379 | 14·95 | 33 | 27 | 17 | 386 | 14·42 |
| 1905 | 46,380 | 1,060 | 22·85 | 126 | 118·86 | 508 | 10 95 | 27 | 19 | 25 | 514 | 11·08 |

Area of District in acres (exclusive of area covered by water)—5,172.

Total population at all ages—28,857.
Number of inhabited houses—5,417.
Average number of persons per house - 5·3.
} At Census of 1901.

Institutions within the District receiving sick and infirm persons from outside the District—

St. Mary's Convent, St. Alban's;
Nazareth House, All Saints';
The Glen, St. John's.

Institutions outside the District receiving sick and infirm persons from the District—
Rochford Union Workhouse.

Other Institutions, the deaths in which have been distributed among the several localities in the District—

The Borough Sanatorium ;
The Victoria Hospital;
Private Nursing Institutions.

(The above also receive sick and infirm persons from outside the District.)

## Table III.

Cases of Infectious Disease notified during the Year 1905.

| NOTIFIABLE DISEASE. | CASES NOTIFIED IN WHOLE DISTRICT. | | | | | | TOTAL CASES NOTIFIED IN EACH LOCALITY. | | | | | NO. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | At all Ages. | At Ages—Years. | | | | | 1 St. John's. | 2 St. Mary's. | 3 St. Alban's. | 4 All Saints'. | 5 Southchurch. | 1 St. John's. | 2 St. Mary's. | 3 St. Alban's. | 4 All Saints'. | 5 Southchurch. |
| | | 1 to 5. | 5 to 15. | 15 to 25. | 25 to 65. | 65 and upwards. | | | | | | | | | | |
| Diphtheria | 74* | 16 | 42 | 7 | 9 | — | 27 | 10 | 27 | 8 | 2 | 20 | 9 | 21 | 7 | — |
| Erysipelas | 17 | — | 3 | — | 12 | 2 | 7 | 2 | 3 | 5 | — | — | — | — | — | — |
| Scarlet Fever | 87 | 20 | 51 | 10 | 6 | — | 24 | 12 | 19 | 16 | 16 | 16 | 9 | 17 | 10 | 14 |
| Enteric Fever | 21* | — | 4 | 6 | 11 | — | 6 | 3 | 2 | 7 | 3 | 3 | 2 | 1 | 6 | 2 |
| Totals | 199 | 36 | 100 | 23 | 38 | 2 | 64 | 27 | 51 | 36 | 21 | 39 | 20 | 39 | 23 | 16 |

* 2 Withdrawn.

# Table IV.

## Causes of, and Ages at, Death during Year 1905.

| Causes of Death. | Deaths at the subjoined Ages of "Residents" whether occurring in or beyond the District. | | | | | | | Deaths at all Ages of "Residents" belonging to Localities, whether occurring in or beyond the District. | | | | | Total Deaths, whether of Residents or Non "Residents" in Public Institutions in the District. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All Ages. | Under 1 year. | 1 and under 5. | 5 and under 15. | 15 and under 25. | 25 and under 65. | 65 and upwards. | St. John's. | St. Mary's. | St. Alban's. | All Saints'. | Southchurch. | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Measles ... .. | 6 | 1 | 3 | 2 | — | — | — | 2 | 3 | — | 1 | — | 1 |
| Whooping Cough ... | 18 | 6 | 12 | — | — | — | — | 4 | — | 2 | 8 | 4 | — |
| Diphtheria and Membranous Croup ... | 1 | — | 1 | — | — | — | — | — | — | — | 1 | — | 1 |
| Croup ... ... ... | 3 | 1 | 2 | — | — | — | — | 1 | — | — | 2 | — | — |
| Fever, Enteric ... | 8 | — | — | — | 3 | 5 | — | 1 | 1 | 1 | 3 | 2 | 3 |
| Epidemic Influenza .. | 6 | — | — | — | — | 4 | 2 | 4 | 1 | 1 | — | — | — |
| Diarrhœa ... ... | 24 | 21 | 3 | — | — | — | — | 7 | 5 | 5 | 6 | 1 | — |
| Enteritis ... .. | 10 | 9 | — | — | — | 1 | — | 4 | 1 | 2 | 1 | 2 | — |
| Other Septic Diseases (including Rheumatic Fever) .. | 8 | 1 | 3 | 1 | 1 | 2 | – | 2 | 1 | 2 | 3 | — | 2 |
| Phthisis (Pulmorary Tuberculosis) ... | 52 | — | — | 1 | 5 | 44 | 2 | 17 | 8 | 13 | 9 | 5 | 3 |
| Other Tubercular Diseases ... ... | 24 | 7 | 8 | 2 | 2 | 5 | — | 7 | 5 | 4 | 7 | 1 | 3 |
| Cancer, Malignant Disease ... ... | 41 | — | — | — | 1 | 20 | 20 | 16 | 5 | 7 | 12 | 1 | — |
| Bronchitis ... ... | 34 | 10 | 4 | — | — | 4 | 16 | 14 | 2 | 11 | 6 | 1 | 1 |
| Pneumonia ... ... | 16 | 6 | 1 | — | — | 9 | — | 4 | 3 | 3 | 5 | 1 | — |
| Pleurisy ... .. | 3 | — | — | — | — | 3 | — | 2 | | 1 | — | — | — |
| Alcoholism<br>Cirrhosis of Liver } ... | 14 | — | — | — | — | 13 | 1 | 4 | 4 | 1 | 3 | 2 | 3 |
| Venereal Diseases .. | 1 | — | — | — | — | 1 | — | 1 | — | — | — | — | — |
| Premature Birth .. | 19 | 19 | — | — | — | — | — | 1 | 3 | 4 | 8 | 3 | — |
| Diseases and Accidents of Parturition .. | 4 | 1 | — | — | 1 | 2 | — | 1 | — | 2 | — | 1 | — |
| Heart Diseases . | 32 | 1 | — | 1 | — | 15 | 15 | 13 | 6 | 2 | 8 | 3 | 2 |
| Accidents ... .. | 8 | — | 1 | 1 | — | 6 | — | 5 | 1 | 1 | 1 | — | 2 |
| Suicides ... .. | 6 | — | — | — | 2 | 3 | 1 | 3 | — | — | 1 | 2 | 1 |
| All other Causes ... | 177 | 43 | 8 | 4 | 5 | 49 | 68 | 53 | 42 | 32 | 37 | 14 | 7 |
| All Causes .. | 515 | 126 | 46 | 12 | 20 | 186 | 125 | 165 | 91 | 94 | 122 | 43 | 29 |

# Table V.

## Infantile Mortality during the Year 1905.

Deaths from stated Causes in Weeks and Months under One Year of Age.

| CAUSE OF DEATH. | | Under 1 Week. | 1-2 Weeks. | 2-3 Weeks. | 3-4 Weeks. | Total under 1 Month. | 1-2 Months. | 2-3 Months. | 3-4 Months. | 4-5 Months. | 5-6 Months. | 6-7 Months. | 7-8 Months. | 8-9 Months. | 9-10 Months. | 10-11 Months. | 11-12 Months. | Total Deaths Under One Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Causes | Certified ... | 21 | 7 | 2 | 6 | 36 | 14 | 7 | 10 | 8 | 8 | 5 | 7 | 4 | 6 | 4 | 7 | 116 |
| | Uncertified | 3 | — | — | — | 3 | 2 | — | 3 | 1 | — | — | — | 1 | — | — | — | 10 |
| Common Infectious Diseases: | | | | | | | | | | | | | | | | | | |
| Measles ... ... | | — | — | — | — | — | — | — | — | — | — | — | — | — | 1 | — | — | 1 |
| Whooping Cough | | — | — | — | — | — | 1 | 1 | 2 | — | — | — | — | — | — | 1 | 1 | 6 |
| Diarrhœal Diseases: | | | | | | | | | | | | | | | | | | |
| Diarrhœa, all forms ... ... | | — | — | — | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 21 |
| Enteritis (*not Tuberculous*) ... | | — | — | — | 1 | 1 | — | — | — | — | 1 | — | — | — | 1 | — | — | 3 |
| Gastritis, Gastro-intestinal Catarrh ... | | — | — | 1 | 1 | 2 | 1 | 1 | 2 | — | — | — | 2 | — | — | — | — | 8 |
| Wasting Diseases: | | | | | | | | | | | | | | | | | | |
| Premature Birth | | 13 | 1 | — | 2 | 16 | — | 1 | — | — | 1 | — | — | — | — | — | — | 18 |
| Congenit'l Def'cts | | 1 | — | 1 | — | 2 | 1 | — | — | 1 | — | — | — | — | — | — | — | 4 |
| Atrophy, Debility, Marasmus ... | | 4 | 3 | — | 1 | 8 | 6 | 1 | 1 | 3 | 1 | — | — | 1 | — | — | — | 21 |
| Tuberculous Diseases: | | | | | | | | | | | | | | | | | | |
| Tuberculous Meningitis ... | | — | — | — | — | — | — | — | — | — | — | — | 1 | — | — | — | 1 | 2 |
| Tuberculous Peritonitis—Tabes Mesenterica . | | — | — | — | — | — | — | — | — | 1 | — | — | — | — | — | 1 | 1 | 3 |
| Other Tuberculous Diseases ... | | — | — | — | — | — | — | — | 1 | 1 | 1 | — | — | — | — | — | — | 3 |
| Meningitis (*not Tuberculous*) ... | | — | — | — | — | — | — | — | — | — | 1 | — | — | — | — | — | 1 | 2 |
| Convulsions .. | | 4 | 3 | — | — | 7 | 1 | — | 3 | — | — | 1 | — | 2 | 1 | — | 1 | 16 |
| Bronchitis ... ... | | — | — | — | — | — | 3 | — | — | — | 1 | 1 | 2 | 1 | — | 1 | 1 | 10 |
| Laryngitis ... ... | | — | — | — | — | — | — | — | — | — | 1 | — | — | — | — | — | — | 1 |
| Pneumonia ... | | — | — | — | — | — | — | 1 | 1 | — | — | — | 1 | — | 1 | — | — | 4 |
| Other Causes ... | | 2 | — | — | — | 2 | 1 | — | — | — | — | — | — | — | — | — | — | 3 |
| | | 24 | 7 | 2 | 6 | 39 | 16 | 7 | 13 | 9 | 8 | 5 | 7 | 5 | 6 | 4 | 7 | 126 |

Population (estimated to middle of 1905)—46,380.
Births in the year—Legitimate 1,030, illegitimate 30.
Deaths from all causes at all ages—514.

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